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DEVOTED TO

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MARCH.

"For well thou know'st 'tis not the extent
Of land makes life, but sweet content.
When now the cock, the ploughman's horn,
Calls forth the lily-wristed morn;
Then to the corn-fields thou dost go
Which though well soil'd, yet thou dost know
That the best compost for the lands
Is the wise master's feet and hands."

WORK FOR THE MONTH.

THE CROPS OF THE SEASON.

Have you, as we suggested last month, laid your plans for the season? What crops will you plant, and what land will you devote to them? What manures must you provide for the several crops? Are any deficiencies in team or implements supplied? These are all matters which should be attended to without delay.

PLOUGHING.

Before starting his plough, the young farmer should have his mind impressed with the great importance of laying well the foundation of the season's work by a deep and thorough overturning of the ground. This is a revolution about the necessity of which there is no question. The mere destruction of the grass, however, to make room for a growing crop, is only one of the many good reasons for ploughing, and he who fails to see them all will not so well understand the necessity of a deep as well as complete inversion of the sod. We will revert to the subject on another page. In the meantime, let a good plough and not less than three well-conditioned horses, be in readiness for breaking any sod land which you may wish to prepare for a crop.

The first ploughing to be done on a Tobacco farm should be the ground intended for that crop. It is the practice of some planters to postpone this until the corn is planted. As a general thing the practice is unquestionably a bad one. It is a difficult matter to plough and prepare for planting in due time, and the work will very probably be imperfectly done. This will especially be the case should the season be a dry one, and the soil tending to clay. On the other hand, if well turned in early spring and rolled or harrowed to close the seams, the after work in preparation for planting will be easily and thoroughly accomplished, and the young plants will have a bed prepared in which they will start quickly and grow rapidly.

THE CROP OF OATS.

This crop usually follows the corn crop of last year. Under one system it goes upon such portion of the corn field as may be considered too poor to produce wheat. In this case it is a poor crop without manure, and as it is a part of the same system to sow clover seed with the small grain, the result is very apt to be a failure of both oats and clover, unless some fertilizer be used. We commend rather the Pennsylvania system, which gives the corn ground to oats without clover seed. The oat stubble is then ploughed soon after harvest for wheat. All the manures of the yards are applied, and the clover seeds sown the following spring on a better preparation than it gets under any other system, while the wheat has the benefits both of manure and early sowing.

The proper preparation for this crop is a good ploughing as soon as the frost is out of the ground and it is dry enough. Sow two bushels

of seed to the acre on the fresh turned ground and harrow in. If clover seed are to be sown, sow immediately and follow with roller or a heavy brush.

BARLEY.

This crop does best on a light rich soil. If sown on ground not rich, it should have a hundred and fifty to two hundred pounds of manipulated guano or its equivalent in other manure. One and a half to two bushels of seed should be sown. Prepare as for oats, and sow whenever the ground may be in order.

CLOVER.

No farmer in Maryland who deserves the name, will dispense with the clover crop as a part of his system. We hope it will in time become as common in the more Southern States as it is here where it is considered the very ground-work of improvement as well as of successful cropping. For preparation of seed refer to our notes of January. Sow very early this month, if you have not yet done so, or wait till the frost is entirely out of the ground; then harrow when the ground and weather are moist, but not wet, and follow immediately with the roller. Keep stock off last year's seeding till the middle of May.—Sow plaister as soon as the leaves begin to unfold.

TOBACCO BEDS.

If your tobacco seed is not yet sown, lose no opportunity to get it into the ground at the earliest time that the ground can be got in order. Early seeding—other things being equal—gives earlier and better plants. But it is of the first importance to have the ground in such condition as to moisture, that it will work well, and to bring it to the finest possible condition by chopping and raking. New land it is desirable to burn, to get rid of the chaffy surface, which would keep the bed too light and spongy, but many planters avoid the great labour of burning, and find the free use of guano a good substitute—using at the rate of from 600 to as much as 1,000 pounds to the acre. A free use of guano at any rate, is of great importanee in securing quick growth, security from fly, and early plants. The whole application may be dug at once into the ground, or a part of it may be reserved for a light top-dressing as the plants begin to come up, and after the first picking of the bed.

TOBACCO IN THE HOUSE.

Let the tobacco crop be stripped in preparation for market as opportunity offers. Look well to the bulks that have not been removed since they were stripped. Do not wait till they get warm. Their approach to this condition will be indicated by the tobacco becoming soft, when it should be shaken out at once, and put into another bulk or hung in the house to get thoroughly dried. If allowed to remain too long in bulk it gets a bad smell, which it will never get well rid of.

CORN CROP.

The ploughing for this crop will be done, in part, this month, and we suggest here, that the manure from the yards, if used, be put on after ploughing, and that any commercial fertilizer you may use be applied on the surface and as early as you can, to get the benefit of spring rains, and harrowed in.

THE VEGETABLE GARDEN.

MARCH.

The Vegetable Garden becomes now matter of much interest. Early attention should be given to a thorough digging and preparation of the ground. While the spade is the best implement for preparing the soil, it involves a great deal of labour, and it will be found better economy in general to combine the Fruit and Vegetable Garden and use the plough. The spring preparation should consist of a deep ploughing and subsoiling to the depth of eighteen inches. Thorough draining, if the subsoil be at all wet, is a prerequisite absolutely necessary for a garden soil; then make it deep by ploughing and rich by intermixing well good manure (well rotted compost is the best) and you have laid the foundation on which you will build with satisfaction. For vegetables and fruit trees these preparations are alike necessary. The fruits grown in the Vegetable Garden should be dwarf trees of whatever sort you fancy, and the small fruits, as Currants, Gooseberries, Raspberries, &c. With most of these the growth of garden vegetables will not materially interfere, and the same attention will serve for all.

MANURES.

Continue to prepare composts as suggested last month. As the garden crops are gross feeders, and will have extra labour, give them extra manure, and if your composts are not as abundant as you may desire, do not begrudge a little guano or other fertilizer. Have ample supplies of vegetables for family and servants, and any you may have extra, will not go amiss to cows or hogs.

GREEN PEAS.

Sow a full crop of Peas this month of early and late sorts. Perhaps some of our readers tried last year the method suggested by a lady over the signature "Home Comforts." On well

prepared soil the line is stretched and a shallow drill made on each side on which the peas are sown. Common fence logs are then laid parallel just outside the Peas as sown; the Peas being then covered, the space between the logs, as filled up, cover with good manure, and they require no more work, except to stick them when five or six inches high.

HOT BEDS.

Hot beds will require close attention this month. Give the plants air in all good weather, and guard carefully against sudden changes.—Keep up a good but moderate heat.

POTATOES.

Plant early Potatoes, if not yet done as heretofore directed.

CABBAGE SEED.

Sow these in border for late crop, manure well and sow very thickly.

LETTUCE AND RADISH.

Sow seeds of these in open border.

CARROTS, BEETS, PARSNIPS.

Sow seeds of these in drills with compost, late in this or early next month.

STRING BEANS.

Plant late this month.

TOMATO AND EGG PLANT.

Sow seeds of these in border for late crops.

CELERY.

Sow Celery seed for early crop.

SEEDS.

Set out plants of Cabbage, Beets, Ruta Bagas, &c., to raise seed from.

ASPARAGUS.

Asparagus beds, if not dressed and manured in the fall, should be attended to now. Dig and manure well and dress with salt and ashes. If a new bed is to be made, give a very deep digging and thorough manuring.

ONIONS.

Plant out sets for early crop, and sow seeds in rich soils for main crop.

RHUBARB OR PIE PLANT.

Set out in a rich border plants, and sow seeds.

GARDEN HERBS.

Set out plants and sow seeds of the various garden herbs.

PEA STICKS AND BEAN POLES.

Get a supply of these before the busy season comes on.

RUTA-BAGAS.—Ruta-Bagas increase in quality as they increase in size—so select medium sized turnips and large ruta-bagas.

THE FLOWER GARDEN & LAWN.

Make at once all necessary preparation of ground, and provide such ornamental trees, shrubs, &c., as you may desire. When we speak of the Flower Garden, we do not mean to suggest a separate enclosure for flowers, but rather borders and beds designed to decorate the portion of the Lawn nearest the dwelling. If the Lawn is an extensive one, it is very desirable to have it grazed regularly with sheep. In that case a portion where the flowers are planted should be protected by a low enclosure, or a sufficient number of sheep turned on at regular intervals to eat the grass quickly off, and a careful hand set to watch them to prevent damage to the flowers.

A few deeply cultivated and well enriched beds of well selected plants will give a much more satisfactory show of flowers than much surface indifferently tended. In this as in other things, to do well what you undertake to do, do not undertake too much. The grass and the trees are the important features of the surroundings of the house. Be sure first of having them all right, and then as many flowers as you can.—The grass, if not top-dressed in fall, may have now a dressing of ashes and plaister or any fine compost at command, and should be well rolled. In the planting of trees be sure that a half dozen well planted will be worth three times that number stuck in the ground in the common way. Make a circle of not less than six feet diameter, dig to twice the depth of the spade, throwing out all the poor subsoil and supplying its place with rich loam from fence corners or elsewhere, mixed with compost. Plant in this, pruning off all broken or irregular roots, not too deeply, and spread around the roots a mulch of long litter. The result will show that you have saved time by the pains you have taken.

THE GREEN HOUSE.

Pot off early plants of annuals, to be early to go in the open border when the weather is warm enough. Petunias, Verbenas, &c., will accompany these into the open ground and make an early show of flowers.

PELARGONIUMS.

These will begin to grow—keep them free from insects and dead foliage and give plenty of air in fine weather.

AZALEAS.

Give these plenty of water when in bloom.—Pot off young plants and give a little heat.

CAMELLIAS.

Those plants which are done flowering should be repotted if they need it.

FUSCHIAS

And other soft-wooded plants will now be growing finely. Cut off straggling shoots and train the plants into handsome shape.

THE FRUIT GARDEN.

As early as possible this month finish pruning Cherries and Plums, and finish Apples and Pears by the close of the month. Finish off also Peaches and other stone fruit, if not already done early in the month.

GOOSEBERRIES AND CURRANTS.

Finish pruning these early in the month.—Keep the heads well open so as to admit sun and air freely, if you would have large and well flavored fruit. Plant out any additions that you may want.

RASPBERRIES.

Plant out Raspberries—select good strong shoots of last year's growth for the purpose.

STRAWBERRIES.

New plantations of Strawberries may be made at almost any season, but should be planted this or early next month, if a full crop is wanted next year. Plants of last year's growth should be planted.

If the beds are grassy now, they must be thoroughly cleaned out and cultivated, but this should have been done in the fall, and the bed in that case left entirely undisturbed till after the crop is off, on account of the injury done the fruit by the grit.

ORCHARD AND NURSERY.

In the Orchard all pruning should be completed. Old trees should be scraped clean of moss when necessary, and manured.

In the Nursery sow seeds of Apples, Pears and Quinces—also Plum, Peach, Apricot and Cherry stones.

Plant out stocks for budding and grafting, early this month in rows four feet apart and eighteen inches in the row.

Young trees grafted last year should have their shoots shortened so as to cause them to throw out side shoots to form a head.

TURNIPS.—Never select the largest turnips for family use; they decrease in nutrition as they increase in size. Give the large ones to the cattle.

Physiology and Chemistry of Food.

The uses of food are to support animal heat, produce fat, repair the waste continually going on, and to increase the growth of the animal. If we take any one representative of our various farm foods, as wheat, and consume it in a crucible, we find remaining but a small proportion of white ashes. This, on investigation, will be found to consist of insoluble earthy matters, chiefly a combination of phosphoric acid and lime; this being useful in the formation of the *bone* of the animal, which may be fed on the food operated upon. In addition to these insoluble earthy matters, the ash will be found to consist of saline and soluble substances. Those consisting mainly of common salt and phosphate of soda enter largely into the composition of the *blood;* while the salts of potash—another ingredient in these saline substances—abound in the *juice of the flesh* of the animal. So much for the incombustible portions of food. Of the combustible portions, we find that it is composed of a greater variety of organic compounds, as starch, gum, sugar, cellular fibre, albumen, casein, and gluten.

"By the aid of chemistry," says Professor Tanner, in his Prize Essay on the 'Cattle of the West of England,' in the *Journal of the Bath and West of England Society*, vol. vi., new series, "we have arrived at a knowledge of the materials which compose the principal kinds of food, and also the uses of their several component parts. All may be arranged under two classes, according as *nitrogen* does or does not enter into their composition. Those bodies in which nitrogen is present are distinguished as *nitrogenised* matter, and the following are the principal representatives of this group which were found in food:—Vegetable fibrin, vegetable albumen, and vegetable casein. These possess a great similarity of composition, and we find their counterparts in the fibrin, albumen, and casein of the animal body. Investigations undertaken with much skill and care leads to the conclusion that, by the aid of vegetation, certain compounds are *prepared* during the plant's growth, which are actually ready to be *transferred* to the animal body for the promotion of its muscular growth; and we shall have an opportunity of seeing that the growth of the body is entirely dependent upon them. The peculiar duty of those nitrogenised compounds is the development of the muscles and tissues of which the body is built up, and the discharge of this duty is known as the nutritive function of food. In fact, the nutritive value of food is entirely dependent upon the

presence of those substances, for without them growth is impossible." *

There is another class of compounds used as food, and these are distinguished by the *absence of nitrogen*, and are named *non*-nitrogenised constituents of food. The representatives of this class are fat, starch, gum, cane-sugar, grape-sugar, pectine, alcohol. The use of these substances is for maintaining the heat of the body, and for supplying the muscular tissues with soft oily juices, which will lubricate them, and render their action smooth and pleasant. Cattle have bodies warmer than the air around them; for whilst their temperature generally ranges from 95° to 105° Fahrenheit, the surrounding atmosphere may vary from 20° Fahrenheit and upwards, and in the south of England it will average about 50° Fahrenheit throughout the year. Hence, as these animals are much warmer than the air, they lose a considerable quantity of heat. The heat of the body must be kept up to its proper standard, and it is one office of these ingredients of the food to perform this function.

When these compounds are present in larger proportions than is necessary for maintaining the heat of the body, then nature makes a store *in the form of fat;* consequently heat-producing and fat-producing substances are identical; but as the former must be fully satisfied before the latter can claim a share, it is clear that, as we lessen the demands for heat, the greater will be the *surplus* remaining for the formation of fat. Dr. Playfair has compared the use of food in the animal body to the combustion of fuel in a furnace. He says (*Royal Agricultural Journal*, vol. iv. p. 221): "The body is the furnace, the food is the fuel, the excrements are the ashes, and the gases expired from the mouth are of the same composition as those which fly up the chimney of the furnace."

It is obvious that, as both the nitrogenous and non-nitrogenous substances play important parts in the feeding of stock, the maintenance of a proper balance between these two is of the utmost importance, and constitutes the very foundation of successful feeding. It has, however, only been of late that the full importance of this balance has been recognised. Some authorities have held that the feeding value of any food was to be "estimated by the quantity of nitrogenous matters it contained;" a view which undoubtedly received countenance from the great nutritive effects obtained from oil-cake, and other food containing a large quantity of nitrogenous substances. Later investigations, in which the particular causes of these effects have been examined, have shown that, however important these substances may be, their effect is brought out most completely when they are combined with the proper quantity of the respiratory elements. "For the healthy performance of the functions of life," says Professor Tanner,* "the food should contain fat-forming *and* flesh-producing matter. The supply of the one without the other is most unfavorable in its influence.—As an extreme illustration, it is known that animals fed upon starch and sugar have perished from rapid starvation because of the absence of flesh-forming matter to maintain the body. The functions of nature require the *combined action* of these bodies: hence, if you wish to promote the formation of flesh in a growing animal, the presence of fatty matter is necessary for its healthy production." The Professor, in the same essay, gives a table which proves the incorrectness of the opinion long held, that the value of foods may be estimated by the nitrogen they contain:

	COMPOSITION.			FEEDING VALUE.	
	Non-nitrogenised matter, per cent.	Nitrogenised matter, per cent.	Water, per cent.	As proved.	Per cent.
				lb.	
Barley	66.	13.	14.83	6 to 1	16.7
Oats	55.5	13.6	12.8	7 to 1	14.3
Beans	46.5	23.3	14.8	8 to 1	12.5
Pease	50.	23.3	14.1	8 to 1	12.5
Linseed-cake	13.62	28.66	8.6	5 or 6 to 1	16.7
Linseed-cake and Pease, equal parts	31.76	25.93	11.3	4½ to 1	22.2
Rape-cake	11.3	33.7	6.8	6 to 1	16.7
Cotton-cake	30.4	42.9	7.9	6 to 1	16.7
Clover-hay	40.	9.3	14.0	12 to 1	8.3
Swedes	8.474	1.44	89.	150 to 1	.66
Mangolds	8.19	1.81	88.	150 to 1	.66
Carrots	10.	1.5	86.	150 to 1	.66

The practical fact deduced from this is, that by the *combined* use of a fat-producing with a flesh-forming food, we obtain almost double the

*Prize Essay on the "Comparative Value of Different Kinds of Food," *Journal of Bath and West of England Society*, vol. viii., part 2. New Series,

quantity of meat than that produced by their use when separated *from each other*. The "feeding value" column shows that, if it takes 150 lb. of swedes to produce 1 lb. of flesh, 5 or 6 of linseed cake will produce the same weight.—There are, however, certain circumstances which materially modify the value of a food; to these we shall hereafter refer; meanwhile, giving Dr. Voelcker's* opinion on the importance of the non-nitrogenised substances of food: "Neither the health, nor indeed the life, of all our domesticated animals can be maintained by food destitute of nitrogenised or flesh-producing matters. Though absolutely necessary to the very existence of animal life, long experience and direct experiments have proved alike, that food consisting entirely of muscle-producing matter cannot support the life of herbivorous animals for any length of time. Thus a goose, it has been found by experiment, when fed with albumen or white of egg, died after 46 days, her original weight of 8 lb. 1 oz. having sunk to 4½ lb. Similar experiments have shown that herbiverous animals, when fed upon nitrogenised food, containing no starch, sugar, or other non-nitrogenised compounds, notwithstanding the liberal supply of the highly nutritive albuminous matters, became emaciated, and died almost as soon as others fed upon food containing no nitrogen at all. Experience thus teaches us that starch, fat, sugar, gum, and other organic compounds not containing nitrogen; are almost as essential to the well-being of herbivorous animals as the flesh-forming principles."

The same authority, on a still later occasion,† thus gives a more decided opinion on the point now under consideration: "I am aware," he says, "that it was the fashion not many years ago to measure the feeding properties, and even the fattening qualities, of articles of food by the amount of nitrogenous or flesh-forming matters; but these views are not supported by any practical experiments, nor indeed by the every-day experience that we have respecting not only human but cattle food. We pay more for food rich in nitrogenous matter, but which does not produce so much butcher's meat. It is a matter of much importance to the farmer to know how much he gets back for the money he expends in the purchase of food. I have no hesitation in saying, that more money is made by the purchase of food rich in oil, starch, or sugar, than in the purchase of food which contains an excess of nitrogenous matters." It should not, however, be forgotten that the nitrogenous elements are essential; for although the animal organization has the power to make fat from gum, sugar, and mucilage, it has not the power to make from these the slightest "particle of flesh." Again, the nitrogenous substances are not to be looked upon simply as flesh-formers; for the portions not assimilated for this purpose are passed through the animal, and "obtained," to use the words of Dr. Voelcker, "again in the dung, with the exception of a small quantity that escapes by evaporation through the skin or through the lungs. A certain quantity of nitrogenous food evaporates through the skin, or with the perspiration; but by far the largest proportion, according to some experiments, 9-20ths of the flesh-forming or nitrogenous matters of food are found again in the dung; according to others, the amount is ⅓ths. But, speaking in round numbers, I think we are not far wrong in saying that we may fairly expect three-fourths of the nitrogenised matters of oil-cake back again in the manure, and perhaps we are safe likewise in asserting, that fully one-half of the money-value of rape and the best cotton-cakes is obtained back again in the manure."

The following summary of the different purposes to which the proximate constituents of food are applied in the animal economy will be useful; it is taken from the paper on the "Chemistry of Food," already referred to:

"1 The earthy substances contained in food, consisting chiefly of phosphate of lime and magnesia, present the animal with the materials of which the bony skeleton of its body principally consists. They may be called, therefore, bone materials.

2. The saline substances—chloride of sodium and potassium, sulphate and phosphate of potash and soda, and some other mineral matters occurring in food—supply the blood, juice of flesh, and various animal juices, with the necessary mineral constituents.

3. Albumen, gluten, legumin, and other nitrogen-containing principles of food, furnish the animal with the materials required for the formation of blood and flesh; they are therefore called flesh-forming substances.

4. Fats and oily matters of the food are employed to lay on fat, or to support respiration and animal heat.

5. Starch, sugar, gum, and a few other non-nitrogenised substances, consisting of carbon, hydrogen, and oxygen, are used to support res-

*"Chemistry of Food." *Journal of the Bath and West of England Society*, vol. iv. New Series.

†Lecture on "Oil Cakes" before the Royal Agricultural Society of England, 1860.

piration (hence they are called elements of respiration,) or they produce fat when given in excess.

6. Starch, sugar, and the other elements of respiration alone, cannot sustain the animal body.

7. Albumen, gluten, or any other albuminous matter alone, does not support the life of herbiverous animals.

8. Animals fed upon food deficient in earthy phosphates or bone-producing principles, grow sickly, and remain weak in the bone.*

9. The healthy state of an animal can only be preserved by a mixed food which contains flesh-forming constituents as well as heat-giving principles, and earthy and saline mineral substances in proportion, determined by experience, and adapted to the different kinds of animals, or for the purpose for which they are kept.—*Journal of Agriculture.*

Swamp Muck.

Good swamp muck when used in a dry state, is a great absorbent of liquids, and a retainer of the ammonia and soluble salts of manures, but these are retained by it as a sponge retains such things—by capillarity and mechanical force.—Muck is also a good retainer of moisture when applied to dry sandy land. But in point of fact, muck is a much less valuable fixer or retainer of ammonia and the soluble salts of manures, than clay or clayey soils. If yards were made basin-shaped, and were fitted with aqueduct logs or other contrivances, so as to carry the surplus drainage to a large cistern or vat (three or four feet deep,) filled with a clayey loam, so that the drainage would leach through the clayey loam, the foul and colored liquid that went on to the top of the clayey loam, would come out at the bottom clear and divested of taste, color and smell. The ammonia, potash, phosphates, &c., would be retained, chemically combined with the alumina and carbonaceous matter of the clayey loam. These substances appear to possess to a great degree the power of chemically combining with both the mineral and gaseous constituents of manure and storing them up, so that the rains cannot wash them out; while at the same time, the soil is so constituted that it readily yields up these necessary ingredients to the growing plant as needed. There is abundant proof of the above. There is a divinity in all this. There is no chance or haphazard about it.—L. Bartlett, *in Country Gentleman.*

*"There is little danger," says Prof. Tanner, (*Journal of the Bath and West of England Society*, vol. viii, part 2, New Series,) "of their being a deficiency of the supplies of mineral matters, because of the stores formed in all vegetable produce. It is to the due and proper supply of the other classes of food that attention should be especially directed."

On the Presence of Tartaric Acid in the Cultivated Grape of the United States.

BY PROFESSOR ANTISELL.

The assertion has been frequently made in publications in this country, that the growth of grape-vines for the manufacture of wine is a project of doubtful success, since in the United States the grape does not form tartaric acid in the same large proportion in which it is found to exist in the European plant, its place being supplied by the vegetable acids, which alter the flavor and value of the wine produced.

Inasmuch as the cultivation of the grape is now prosecuted with success in the Ohio valley, and extending over a large section of country, and since the climate and soil of the United States are eminently favorable to the growth and propagation of the vine, as shown by the abundant woody development, it becomes a matter of importance to know whether the juice of the fruit grown in the United States differs in any important particular as regards the nature or amount of acid from that of European grapes.

For the successful manufacture of wine the presence of tartaric acid is all essential; for, by its tendency to unite with the potass, also present in the pulp, and to form the acid tartrate of potass (cream of tartar)—a salt soluble in the pulp of the grape, but not soluble when, by fermentation, alcohol is formed in the juice, and which is therefore thrown down and separated from the wine forming the "tartar"—depends the superiority and greater healthfulness of true wine over the fermented liquors of other pulpy fruits, whether indigenous or exotic.

In the pulpy fruits used in the manufacture of domestic wines the acids present are chiefly malic and citric, which form with potash salts soluble not only in the fresh juice but also in the fermented wine. They are consequently not thrown down or separated out of the wine as alcoholization goes on in the fermenting vats, and their presence in the wine renders the latter unhealthy, it being liable to become acid in the stomach, and to produce derangement of function in that organ. Hence, the real superiority of the wine of the grape above the fermented juices of other fruits depends not upon fancy, nor an uneducated taste, but upon the production of an alcoholic liquid not containing within it substances injurious to digestion.

Tartaric acid is as essential as sugar in the manufacture of wine; in dry wines the tartar predominates much more than in sweet, in which sugar is the predominant element. This acid

diminishes as the fruit approaches ripeness; and it is also diminished in grapes grown where the climate is hot and dry in the season when the fruit is ripening. In the south of Europe, when, in the autumn, the African winds blow northward, when the grape is ripening, those portions of the Mediterranean shores exposed to a hot and dry wind do not produce dry wines, but wines that are always sweet, because the proportion of sugar and tartar are out of relation with each other. Thus the rich, sweet grape of Malaga has but little tartaric acid, and a sweet wine is the result, while the wine of Burgundy has more tartar and less sugar, and produces a more acid wine.

To determine the presence and proportion of tartaric acid, I selected the Catawba grape as that most abundantly grown for wine purposes, and, by the kindness of Mr. Michael Werk, of Greene county, Ohio, who placed at my service several pounds of ripe grapes, and a sample of the tartar produced, I have been enabled to furnish the following results:

Six pounds of grapes, pressed, yielded 56 ounces of a literally clear, colorless juice of specific gravity 1.074. This juice was diluted with an equal amount of distilled water, and the mixed liquid passed through a fine strainer to separate the cellulose and albuminous matters not dissolved; solution of chloride of calcium with ammonia was added so long as a precipitate was produced, allowing the liquor to rest between the additions; the precipitate was then dissolved in hydrochloric acid, and ammonia added. The precipitate was then collected and dried at a gentle heat, and weighed against a tared filter. By this process the malic acid present is avoided, and the precipitate obtained is either wholly tartrate of lime, or, if not containing any racemic acid present in the juice, forming a racemate of lime. As racemic acid is only a modified form of tartaric acid, and as it is not known to act in any way differently in wines from its congener, it was not deemed necessary to separate them in this examination.

The amount of tartrate of lime attained from six pounds of grapes, or from 4¾ pints of juice, was 4 32-100 grammes, (nearly 67 grains,) which represents 50 16-100 grains of acid, tartrate of potash, originally existing in the juice.

This would give the quantity of cream of tartar present in each ounce of juice as nearly one grain, admitting the whole of the tartaric acid to be combined with potassa, but as there is always some tartrate of lime present in the juice, the amount of cream of tartar is slightly lessened.

The quantity of sugar determined by Fehling's modification of the copper grape-sugar test was 19.6 per cent.

As the grapes examined had ripened very much in the interval between the gathering and the examination, the above proportion of tartrate of potass is probably somewhat less than existed in the fruit. The presence of that amount shows satisfactorily, however, that tartaric acid is the dominating acid in the Catawba grape, and that is produced abundantly in the latitude of Cincinnati.

The sample of crude tartar forwarded by Mr. Werk yielded, on qualitative analysis, acid tartrate of potass, tartrate of lime, sulphate of potass, sulphate of lime, phosphate ammonia, and magnesia. The two last-mentioned salts were present in but small amount.

Mr. Payen, having stated in his work on distillation that the cellular tissue of the pulp contained "tannin," led to a repeated examination of the juice of the pulp; and in every case where common care was taken that the skins should not be pressed, so that any of its liquids might become mingled with those of the pulp, not a trace of tannic acid could be detected, thus verifying Mulder's statement that this acid is wholly confined to the skins.—*Patent Office Report*, 1859.

Sawdust as Manure.

RICHMOND, Feb. 1st, 1860.

To the Editors of the American Farmer:

DEAR SIR: I saw in your most excellent magazine a strong recommendation of sawdust for manure. While it is very fine bedding for horses in the winter, it is too heating in the summer; though to put it in your cow stalls or stables a foot deep—being so great an absorbent—it is most cleanly and desirable, winter and summer. It is due to your readers to warn them, from my sad experience, against using sawdust, mixed with manure, around their fruit trees, as it will infest and ruin the trees by supplying them with the wood-worm, so very abundant in the sawdust. Yours, &c. G. S. P.

RENOVATION.—The editor of the *New England Farmer* says that a gentleman residing in Cambridge informs him that charcoal placed around the roots of the diseased peach stock was serviceable. He immediately removed the soil from around the trunk of a sickly tree in his garden, supplied its place with charcoal, and was surprised at its sudden renovation and subsequent rapidity of growth, and the tenacity with which the fruit held on the branches, and the unusual richness of its flavor when matured.

Pruning Evergreens.

It is a pleasure to see sound doctrines win their way to popular favor. It is not many years since one dared to prune a tree at transplanting. Before that he was sure to get the pity of the knowing ones; now he who does not prune, is the one who gets pitied.

By understanding that trees die after transplanting from evaporation, and that pruning is one of the chief modes of lessening the demand on the mutilated roots for moisture, the re-planting of deciduous trees has become a pretty certain operation. The digging of trees is often entrusted to careless or unskillful hands. One is never certain how his tree will be taken up; but should it be handed him in a dangerous condition, he knows at least how by pruning the head, to save its life.

These facts now constitute a general rule of action in the case of deciduous trees. Evergreens are popularly supposed to be an exception. It is said that the "people are seldom in error, and are never so long," and we hope for their interest it will prove so here.

Evergreens are as thankful for the knife's good offices as a deciduous tree. The same laws govern them, and the same practice follows. Indeed, the laws of evaporation bear harder on the evergreen. It has a larger surface of foliage; more extended channels for evaporation. In winter, when evaporation bears the hardest on a transplanted tree, that of the deciduous section has only its branches exposed. All the moisture it loses passes out through them. But the evergreen has in addition a large mass of foliage, through which its juices are continually being drained, till by spring it becomes as a squeezed orange to the Ice King, and is cast away as worthless.

It is a fortunate circumstance that while a greater necessity is shown for application of the principle, experience shows the evergreen to like it. The anticipated happiness of a want fulfilled, is seldom indeed so well experienced in its realization; for the evergreen absolutely luxuriates in a good pruning. We are not sure that it can have too much. Judiciously performed, we have never seen it over-done.

"Judiciously performed" has a deep meaning when writing of evergreens. We have of course reference to Pines, Spruces and Firs. These constitute what may be termed the border line between the two great divisions of the vegetable kingdom. The Endogen, such as the Palm, that increases from the centre, has an erect tendency, and a disposition to have none, or to lose what few side branches it may have; and the Exogen, which increases from the outside, and has a bushy spreading-headed habit. It is this intermediate position that gives Pines their upright appearance, in which they approach the Endogen; and their branching habit, which allies them to the Exogen. In our practical treatment of them, we have to combine what we would do separately.

If we cut off the head of a true Endogen it will not make another leader, but throws all its strength into its side branches, which usually take the form of suckers from near the surface of the ground. The Cocoa nut and Plaintain are familiar examples. Their stems have to be cut down to the ground when they once lose their heads. In a decided Exogen, a Maple for instance, the cutting off of a leading shoot only makes it the more determinately seek to furnish another to supply its place, and this it does at the expense of the side branches, which become weaker and finer, till if the heading-off is repeated, they often die entirely away.

We have thus to reverse the modes of pruning. To make an evergreen bushy the surest way is to cut out its central shoot. It does not like to make another, and so all its growth is forced into the lower branches, which thus become very dense, and of surprising luxuriance. Very often when old plants are operated on, they will utterly refuse to make another leader, in which case the nearest side branch must be carefully tied up to a stake, secured to the main stem for the purpose. This makes for a couple of years an ugly curve, after that it becomes gradually absorbed in the thickening of the trunk, and is scarcely visible eventually. If, however, the terminal shoot is pinched off with the finger and thumb, while it is young and succulent, in June, when it is elongated, the growth will be just as much checked, while you have the advantage of the formation of a lot of new buds, which will of themselves form leaders another year. We have never known any kind of Pine to fail in making these buds in the shoots of present season's growth, when they will do so but very unwillingly from older wood.

The Scotch Pine, usually so rugged and artforsaken in appearance, makes beautiful objects under this treatment. The top buds, and buds of shoots round about the central shoot, may be freely operated on, but the lowest buds should never be touched. This last rule is essential.

All that we have said has been to illustrate the principle in an every-day view. In transplanting more is useful than to merely pick out

central buds; whole portions of branches may be freely cut away. Top branches be it still remembered. In all this a neat eye will be required to keep a good shape to the tree. Of course they will not be cut off so as to leave the branches standing out like the stubs of a worn out broom; each branch should be taken out close down to where another diverges. Fortunately in Pine and Spruces this can be prettily done by taking out the central shoot in each branch. We saw a friend recently take out one hundred cuttings from a five year old Pinus excelsa and no passing eye could notice that the knife had been used at all, or see anything but a most magnificent specimen which this yearly treatment had rendered it.—*Gardeners' Monthly.*

How Canada Prize Butter was Made.

The winner of the silver medal fer the best butter shown at the Provincial Exhibition, at Hamilton, C. W., gave the process of making it, as follows: "My dairy consists of eight cows, which are milked regularly twice a day. I use earthenware pans, which are scalded with hot water and then cooled with cold water every time they are used. I let my milk stand forty-eight hours; I stir my cream every morning; churn twice a week, and use a box churn. I bring my cream out of the cellar over night and let it stand till the temperature is about 60°, then it generally takes from forty to sixty minutes churning. When the globules of cream begin to break, I put a little cold water into the churn, and continue to do so until the butter is well gathered. I have my butter tray well scalded with boiling water, then rinsed with cold water, then take the butter out of the churn with a wooden ladle, and first work out the buttermilk; secondly, wash it well with clear cold water, and thirdly I work in the salt in the proportion of about one pound of salt to twenty pounds of butter; after which I wash it again with cold water, and let it stand in the butter tray in the cellar till evening, then work it again and leave it till morning, then work out all the water possible. It is then ready to pack in the firkin.

The manner in which I prepare the firkin for use is as follows: I first put a handful of salt and one of bran into the firkin, and also one pail of scalding water, and cover it close for an hour, after which I empty it and fill with cold water and let it stand a day, then empty and rub well with salt; the firkin is then ready for use. I pack the butter with a wooden ladle; when the firkin is full I put a cloth on the butter and cover the cloth with a thick layer of salt to keep the air from the butter. I use the common salt, rolled, and I consider it the best—*Rural New-Yorker.*

Fine Manure and Tight Barns.

One of the substantial farmers of the old Bay State is editor of one of our best family agricultural papers—*The Ploughman.* His practical notions are capital, and worthy of all respect; but we have to pick a bone with him, and thus with a good many of our own subscribers, who rather pride themselves in the distinction "old fogies," which young America so strenuously repudiates.

Now in regard to fine compost we read:

"A friend told us, last week, of an acquaintance near him, who was by birth an Englishman. He was very nice and particular in the preparation of his manures. He had a heap by the road side, and after adding to it meadow mud and various other matters, he repeatedly overhauled his heap, so that at planting time it was all as fine as meal or saw dust.

The Englishman used this on his corn field, and it gave his field of corn a very early start. No field in the vicinity looked so well through the months of May and June, yet at harvest he had but a very small crop of corn—the ears were short and not well filled. No doubt he had minced too much, and *worn away* a large part of his manure before his corn could come in contact with it."

The fact that it gave the corn a good start is evidence that *ammonia*—the only valuable part likely to be lost by careless overhauling—was not wanting, and the conclusion is irresistable, that we must look beyond the mere *mincing* of it for the partial failure of the crop. The land was not strong enough to carry the crop through without *more* or *stronger* manure. The fineness had nothing whatever to do with it.

Again we commend to the notice of our readers the following on tight barns, to which, however, we must take just as decided exception:

"We see some writers are still recommending tight barns for cattle and for hay notwithstanding all the calamities that have come on inexperienced people who thought they had commenced a new era in farming by making very tight barns. There can be no doubt that this was the chief cause of the spread of the fever here.

Mr. Chenery should at once have given his new Holland cattle as much air as possible when he found them drooping with disease—with fever.

The practice of keeping people shut up close, in a fever, has long been antiquated—and good doctors now give them air.

Barns need not be double boarded, for the hay mows may be made on the north side, and so cut

in the winter as to leave the north side of the mow till the last—till the coldest of the weather is past.

Barns that are single boarded, in a proper manner, are warm enough for any cattle, in case the hay-mows are on the north side, or in the cold corner. By double boarding we make the air too close for cattle—and we make it too close to keep hay. It is apt to be musty when it lies close to a side boarded very close. And though a more thorough drying may mend the matter a little, yet all farmers agree that hay is injured by being dried too much. If we must give our hay two hours more sunning in consequence of tight boarding, we must often be forced to expose it out over another night, and run the risk of the weather for three days instead of two—besides we may have all the labor of opening the hay again—that it may not mould in a tight hay-mow."

If barns are tight enough cattle may suffocate. If the ventilation is very bad, they will inevitably contract some disease. And were it not possible to secure perfect ventilation in very tight barns, we certainly would agree entirely with the above article, so far as concerns this part of the subject. But it is possible. The air of every barn should be pure and wholesome as that of the pasture, and it may be so just as well as not; and the fact is, that in any well ventilated barn, though it be exceedingly tight, the air is sweeter and purer than one ventilated by cracks in the weather boarding.

There will be much less danger from disease also, because there are no draughts in a tight barn which is well ventilated. If a cow has a lung disease which is catching, in a barn so built that the wind has tolerable fair sweep through it, except where a hay mow cuts it off, the infection may be wafted from one end of the stalls to the other; but if a ventilating trunk carries off all the exhalations and warm breath of the stock immediately, there is far less danger. Any one putting his head into a ventilating trunk when the cattle are in the stalls, will observe the fresh warm breath and exhalations from the cattle rising through it.

Give us a good tight barn—with our present experience we prefer wood to stone in some respects, but should hesitate to say that we thought it decidedly preferable. Interior ventilation will surely obviate every difficulty, both as concerns the cattle and the hay. The question for practical men who want to build barns is whether tight hay barns will pay. The question of policy in respect to cattle stables, is, in our view, settled: The tighter they are the better, if good ventilation is secured. This is easily done, and the saving in feed, etc., and health and comfort of the stock, will make it amply remunerative. —*Homestead.*

Paper from Indian Corn Leaves.

The London *Daily Telegraph* gives the following account of paper making from Indian corn leaves, which promises to effect a revolution in the paper business, if only half is true that is stated, and we do not see any reason to doubt its correctness:

"Recent experiments have proved Indian corn to possess not only all the qualities necessary to make a good article, but to be in many respects superior to rags. The discovery to which we allude is a complete success, and may be expected to exercise the greatest influence upon the price of paper. Indian corn, in countries of a certain degree of temperature, can be easily cultivated to a degree more than sufficient to satisfy the utmost demands of the paper market. Besides, as rags are likely to fall in price, owing to the extensive supply resulting from this new element, the world of writers and readers would seem to have a brighter future before it than the boldest fancy would have imagined a short time ago.

This is not the first time that paper has been manufactured from the blade of Indian corn; but, strange to say, the art was lost, and required to be discovered anew. As early as the seventeenth century an Indian corn paper manufactory was in full operation at the town of Rievi in Italy, and enjoyed a world-wide reputation at the time; but with the death of its proprietor the secret seems to have lapsed into oblivion.—Attempts subsequently made to continue the manufacture were baffled by the difficulty of removing the flint and resinous and glutinous matter contained in the blade. The recovery of the process has at last been effected, and is due to the cleverness of one Herr Moritz Diamant, a Jewish writing master in Austria, and the trial of his method on a grand scale, which was made at the Imperial manufactory of Schlogelmuhle, near Glognitz, Lower Austria, has completely demonstrated the certainty of the invention. Although the machinery, arranged as it was for the manufacture of rag-paper, could not, of course, fully answer the requirements of Herr Diamant, the results of the essay were wonderfully favorable. The article produced was of a purity of texture and whiteness of color that left nothing to be desired; and this is all the more valuable from the difficulty usually experienced

in the removal of impurities from rags. The proprietor of the invention is Count Carl Octavio Zu Lippe Wessenfeld, and several experiments give the following results:

1. It is not only possible to produce every variety of paper from the blades of Indian corn, but the product is equal, and in some respects even superior, to the article manufactured from rags.

2. The paper requires but very little size to render it fit for writing purposes, as the pulp naturally contains a large proportion of that necessary ingredient, which can at the same time be easily eliminated if desirable.

3. The bleaching is effected by an extraordinarily rapid and facile process, and, indeed, for the common light-colored packing paper, the process becomes entirely unnecessary.

4. The Indian corn paper possesses greater strength and tenacity than rag paper, without the drawback of brittleness, so conspicuous in the common straw products.

5. No machinery being required in the manufacture of this paper for the purpose of tearing up the raw material and reducing it to pulp, the expense, both in point of power and time, is far less than is necessary for the production of rag paper.

Count Lippe, having put himself in communication with the Austrian Government, an Imperial manufactory for Indian corn paper (*maishalm papier*, as the inventor calls it,) is now in course of construction at Pesth, the capital of the greatest Indian corn growing country in Europe. Another manufactory is already in full operation in Switzerland, and preparations are being made on the coast of the Mediterranean for the production and exportation on a large scale of the pulp of this new material."

HORSES' FEET REQUIRE MOISTURE.—Nine-tenths of the diseases which happen to the hoofs and ankles of the horse, are occasioned by standing on the dry plank floors of the stable. Many persons seem to think, from the way they keep their horses, that the foot of the horse was never made for moisture, and that if possible it would be beneficial if they had cowhide boots to put on every time they went out. Nature designed the foot for moist ground—the earth of the woods and valleys; at the same time that a covering was given to protect it from stones or stumps.—*Ohio Farmer.*

The transit across the English Channel is supposed to be the *sic transit* alluded to in the well-known Latin quotation.

The Microscope.

With the help of his microscope, man can enter into a world unknown to the ignorant, and altogether invisible to the unassisted eye. In every plant and flower which adorns the field, in every leaf of the forest, in the seeds, prickles, and down of all vegetables, he perceives beauties and harmonies, and enquisite contrivances, of which, without this instrument, he could have formed no conception. In every scale of a haddock he perceives a beautiful piece of net-work, admirably contrived and arranged, and in the scale of a sole, a still more diversified structure, which no art could imitate, terminated with pointed spikes, and formed with admirable regularity. Where nothing but a speck of *moldiness* appears to the naked eye, he beholds a *forest of mushrooms* with long stalks, and with leaves and blossoms distinctly visible. In the eyes of a common fly, where others can see only two small protuberances, he perceives several thousands of beautiful transparent globes, exquisitely rounded and polished, placed with the utmost regularity in rows, crossing each other like a kind of lattice-work, and forming the most admirable piece of mechanism which the eye can contemplate. The small dust that covers the wings of moths and butterflies he perceives to consist of an infinite multitude of feathers of various forms, not much unlike the feathers of birds, and adorned with the most bright and vivid colors. In an animal so small that the naked eye can scarcely distinguish it as a visible point, he perceives a head, mouth, eyes, legs, joints, bristles, hair and other animal parts and functions, as nicely formed and adjusted, and endowed with as much vivacity, agility, and intelligence, as the larger animals. In the tail of a small fish or the foot of a frog, he can perceive the variegated branchings of the veins and arteries, and the blood circulating through them with amazing velocity. In a drop of stagnant water he perceives thousands of living beings of various shapes and sizes, beautifully formed, and swimming with wanton vivacity, like fishes in the midst of the ocean. In short, by this instrument he perceives that the whole earth is full of animation, and that there is not a single tree, plant, or flower, and scarcely a drop of water, that is not teeming with life and peopled with its peculiar inhabitants. He thus enters, as it were, into a new world, invisible to other eyes, where every object in the animal, vegetable, and mineral kingdoms presents a new and interesting aspect, and unfolds beauties, harmonies, contrasts, and exquisite contrivances, altogether inconceivable by the ignorant and unreflecting mind.—*Dick.*

Mr. Knox's Fruit Farm.

Several months ago, a friend sent us a paper containing an account of the fruit farm of the Rev. J. Knox, near the city of Pittsburg, Pa.

The farm comprises one hundred and twenty-five acres, fully one hundred of which is in close and unintermitted cultivation. The entire farm is divided about thus—fifty acres in strawberries, ten in raspberries, ten in blackberries, seventeen in peaches, ten in apples, and three in very select varieties of the grape, chiefly the Concord, Delaware and Diana.

His small fruits are all set in perfectly straight and equidistant rows. The ground is frequently and abundantly enriched after the most approved treatment. The soil is often and very thoroughly stirred by suitable cultivators, by the hoe, and otherwise, and then gone over at regular intervals and throughout the year, by hand. Every weed is rooted out, and every plant examined, and everything removed which might prove noxious, or added which might prove beneficial to the plants' health, thriftiness and productiveness.

Mr. Knox has in cultivation over one hundred varieties of strawberries, some of which are but of little comparative value for their fruit, but which, in a general collection, are very important in allowing persons interested to form a correct judgment with reference to them, as well as to compare them with others of better repute. Hence, old and new, native and foreign, rejected and accepted varieties have been procured, but many of them are only kept in the specimen bed.

His strawberries consist of the following varieties: British Queen, Buist's Prize, Boston Pine, Brighton Pine, Baltimore Scarlet, Burr's New Pine, Compte de Flanders, Hovey's Seedling, Hooker, Honneur de Belique, Jenny Lind, Kitly's Goliath, Large Early Scarlet, Longworth's Prolific, McAvoy's Superior, Moyamensing, Nimrod, Peabody's Seedling, Princess Royal, Scarlet Magnate, Scott's Seedling, Triomphe de Gand, Trollope's Victoria, Vicomptesse Herricart de Theury, and Wilson's Albany. There are about twenty-five varieties, which, for fruit, Mr. Knox says he could not get along without, although from three to six kinds will furnish sufficient variety for such as cultivate for family use. He regards the Wilson's Albany as a very valuable and profitable variety, and has shown his faith in it by planting full fifteen acres of it.

After a trial of three years, Mr. Knox places at the head of the list of strawberries, the Triomphe de Gand. But little has yet been said about this variety, and it has not been generally cultivated, but as soon as well known, it will be the most popular strawberry in the country.—Mr. Knox says there is no known excellence which it does not possess. The plants are thrifty, hardy, and vigorous growers, bearing their fruit well up, which renders it easy to be kept clean. They are also wonderfully productive, and the fruit is not only *usually* of very large size, but *uniformly* so, and *throughout the season*, which is longer with it than with most other varieties. The flavor is everything which could be desired. It is of a very beautiful crimson color, glossy and altogether lovely. It keeps well after being picked, retaining its beautiful color and firmness and carries better than any other variety. Mr. Knox planted of this variety, last spring, four acres for fruiting, but was so well pleased with the season's crop that he concluded to devote *all* of these to propagation.

The raspberry department is as yet somewhat small when compared with his strawberry patch, but very large when considered by itself. He has ten acres, very densely planted with over twenty varieties. The Fastolff, Red Antwerp, and Hudson River Antwerp, do exceedingly well with him, but his three favorite varieties are, Brinckle's Orange, Franconia, and Improved American Black Cap. Brinckle's Orange, Mr. Knox considers the finest flavored raspberry in the world—of large size, beautiful color, unvarying productiveness, and delicious flavor. The Franconia berry is not so highly flavored, but is very large.

Mr. K. has about ten acres of blackberries in cultivation, and is rapidly increasing his plantations. The three chief varieties are the Lawton, or New Rochelle, the Dorchester and the Thornless, but he esteems the Rochelle the best.

The Lawton blackberry is said to make excellent wine. The largest growers are bestowing great attention to this new and valuable use for the berry. When large markets are not accessible for the consumption of the fruit, or when the markets happen to be glutted, wine making will be its chief use. It has been proved by actual experiment to be more remunerative to make it into wines *than to sell the fruit at twenty-five cents per quart*. Its yield of wine is most generous, and the process of manufacture most simple. Eight gallons of well ripened fruit will yield five gallons of pure juice, to which twice the amount of water and the requisite amount of sugar is added, making fully fifteen gallons of rich, nutty, generous, and very wholesome wine.—*Exchange.*

A wise man may be pinched by poverty, but only a fool will be pinched by tight boots.

Application of Manures.

As this subject lies at the root of all good culture, you should have it fully discussed; every member should state the result of his practice and observation, and bring all the virtues of the different fertilizing materials to light. I will contribute my mite, with some data. We should cultivate enlarged views; look over the garden fence upon the farm, and consider the value of the products. My own soul was once so small as to bury my brains in a flower-pot, and to think that a garden with a few glass structures was the universe; but now I see what a big place the world is.

It is generally conceded by cultivators, that barn-yard manure is the best for common use; and as it is the droppings of several species of animals, together with straw, I think it better than that of any one species, when applied to clayey soils and heavy loams in its long, fresh state. It warms them, renders them more porous, and allows the roots of rapid-growing plants to enter them more freely. Indian corn, potatoes, melons, squashes, &c., seem to do best upon heavy soils with fresh barn-yard manure; but for sandy and light soils it is best when well rotted, and in that state has a more immediate effect on crops in general. For potting plants it should be almost a mold, and be mixed many months with the soil before being used.

Ligneous manures I think must be most beneficial to trees and other woody plants, although seldom ever applied to them. Leaf mold is almost indispensable to pot culture, and the mold at the bottom of the wood-pile is better; wood ashes leached are used extensively upon sandy soils, produce good crops, and solidify such soils. Waste charcoal is valuable in pot culture, but too expensive for general use. Saw-dust is all converted into manure around the city of Edinburg, Scotland, by bedding cows and horses with it. Tan-bark is also there converted into manures by composting it with other materials, and nurserymen grow the hardier rhododendrons and azaleas in beds out doors, made up with two-thirds of decayed tan-bark and one-third garden loam.

Salt as manure hastens vegetation, and gives earlier maturation to plants than any other kind of manure. I have used night soil, fresh from the walls of this city, upon acres; and for onions, beets, radishes, turnips, and carrots, I have never found anything to equal it for early and heavy crops. Poudrette has a similar effect, but these rich manures make cabbage "club-footed," and do not suit potatoes. The low meadows around Edinburg, into which the sewers of the city empty, yield the greatest crop of grass to be found; they are divided into lots of three and four acres by ditches which lead the liquid manure around them, and are flooded with it at pleasure; they are let yearly at auction to dairymen. The grasses are fit to cut by the time that grasses elsewhere begin to grow in the spring; they give seven cuttings knee high, and so heavy that the scythe can hardly carry the swath through. The market gardeners of Leith surpass all their contemporaries more inland in the production of early and fine vegetables, by the use of sea-weed they gather off the beach after a high tide or storm.

Upon the flat meadows of Long Island Sound, between Harlem and Thorg's Neck, the grass, after being flooded by the spring tide, grows up at a wonderful rate; and asparagus of the finest quality springs up spontaneously all over these. Country people empty the brine of their meat and fish barrels in spring upon their asparagus beds, which is the only manure they get, and they yield plentiful crops. I have used both salt, lime and urine around the base of peach and plum trees for the cut worm, which always keeps them off and invigorates the trees.—*Walter Elder, in Proceedings of Progressive Gardeners' Soc.*

Poisonous Plants.

Ignorance of the true character of many of nature's products, often leads to disastrous and fatal results. This is especially so in the case of poisonous plants, wild, or everywhere cultivated. Comparatively few persons know that the flowers of the Daffodil, the seeds of the Laburnum, the roots of the Scarlet Runner, the leaves of Fool's Parsley, the spray of the Cypress and Yew, the berries of Belladonna, and many other familiar plants, are extremely dangerous; how many a child has been poisoned by such things while the cause remained unsuspected. The common Acacia is now added to the list, as will be seen by the following extract from the *Botanische Zeitung:*

"Dr. J. Moller, in the *Zeitschrift fur Naturund Heikunde in Ungarn*, relates the case of a little girl, eight years old, who was made seriously ill by eating a fresh root of the Acacia tree, which she mistook for liquorice. The appearances of the disorder were extremely similar to those which result from eating the berries of Belladonna. A strong emetic of sulphate of copper removed the danger; lemonade and black coffee being afterwards administered. The next day all symptoms of indisposition disappeared, and only the depression consequent upon such attacks

remained behind. The physician who was called in considered the following circumstances worthy of remark: Before being poisoned the child was suffering from intermittent fever, which did not reappear after the attack. It is, however, uncertain whether the fever was removed by the emetic or by the eating of the Acacia roots; if by the latter, the action of the Acacia would resemble that of Belladonna. Dr. Moller adds that a similar case of poisoning had occurred to himself in the instance of two children chewing fresh dug up roots of this Acacia (Robinia Pseudacacia,) but that also terminated favorably."—*Gard. Chronicle.*

Stable Floors.

Have no floors of wood or stone, but wholly of earth. My plan is to put soil or muck into the stables about a foot deep, (if peat is used, and it is wet, the cattle will sink into it, unless a few inches of loam is spread upon the peat;) then covered with litter to the depth of a foot or so, to prevent treading the dirt, and making it uneven when cattle are first put in. After a few days' use, the floor will become hard and smooth, and will not need as much litter to keep cattle clean and comfortable as floors of plank or stone. In this way all the urine is saved and the continual expense of plank floors is avoided. I greatly doubt the economy of cellar barns. I know they are very fashionable, and have, it is true, much to recommend them, but the great expense, as well as the risk of the planks to become defective and letting the cattle into the cellar "suspended" are certainly objections. There is no necessity for having a single stable floor in any barn, of wood or stone. Floors of earth, after a little use become very smooth and hard, are much more comfortable for cattle and horses, (in fact, horses should be kept on none other,) and animals can be more easily kept clean, as all the liquids are absorbed as soon as dropped, and besides none can be wasted. I do not approve of the plan practiced by Mr. Mechi—making his cattle lay on bare slats, however necessary it may be to his plan of liquid manuring. I do not believe it is economical or hardly humane; and if he will put one animal in a stable with an earth floor daily cleaned and littered, and another animal upon his bare, hard slats, and feed both exactly alike—if the former does not gain flesh faster than the latter, it will prove that the more uncomfortable an animal is kept, the better it will thrive, and in that case the northwest corner of a barn, outside, is the very best place to fatten animals, especially in the winter. —J. G. G., Rhode Island.—*Country Gentleman.*

Cranberry Culture in New Jersey.

A good deal of attention is being given to the cultivation of cranberries in Burlington county, New Jersey. About one hundred and fifty acres have been planted this season. Of this, one farmer, named Chetwood, has set out twenty-five acres; another, named G. Gowdy, seventeen acres; and Mr. Allen is planting ten acres. We have recently seen specimens from a patch of seven-eighths of an acre of Allen's planting, which were picked by him and his daughter, Miss Victoria Allen. The bunch of plants was covered with a mass of berries, some of them having five to ten on a stem. This patch yields one hundred and fifty bushels per acre. Mr. Allen is selling his for $4 a bushel, delivered at the house. The whole expense per acre for building a dam, clearing the land of roots, and setting out the plants, is only about $100. Allen's patch has cost $25 per acre for merely setting out the plants, but this is unusual. Having neglected to keep them clear of grass the first and second years, he will be compelled to re-plant the piece. It costs fifty to sixty cents per bushel to gather them. The work is mostly done by women and children. C. C. P. Crosby, of Brooklyn, has bought a cranberry meadow in Burlington county and will make a commencement this fall with ten acres, and add ten more each succeeding year. Two other men are going to follow the same plan. Considering the high price which cranberries always bring in market, and the cheap cost at which they can be produced, it is strange that more shrewd farmers have not gone into the speculation.—*Tribune.*

Planting Peas Deep to Prolong Bearing.—Elihu Burritt says in the *Homestead*, that—

"The theory, recently advocated, of planting peas very deeply in the earth, in order to prolong the bearing capacity of the vines, has been well tested in Williamstown and found to be correct. A farmer told me that he ploughed a furrow beam deep; then scattered the seed peas at the bottom; after which he turned a deep furrow upon them with his plough, covering them, if possible, to the depth of twelve or fourteen inches. They pushed their way up through the thick mass of earth very soon, and, instead of turning yellow at the bottom and dying after the first gathering, they blossomed and bore until he was tired of picking the pods."

Age of the Rose Tree.—Sprengel mentions a rose tree, still living, which is upward of one thousand years old.

Light for Animals.

Locate your pen where your hogs can have the benefit of light. I don't mean merely *day*-light, but the full, bright light of the sun; it will add to their cheerful contentment, as it does to the human species, and physiologists declare that, other things being equal, families who occupy apartments in the sunny side of dwellings are the most healthy and happy. Although the comparison may to sensitive nerves appear odious, still it is beyond our power or province to change the established laws of nature. I never knew of a hog, or any other animal, kept under the north side of a barn or other building, where the dampness and darkness is never penetrated by the sun's rays, and where the animal was employed as the scavenger for other animals, to be sleek-looking, fat, clean or quiet. I have seen many a pen where the mud and offal was two or three feet deep, and no place of retreat left for the poor occupants upon a higher spot, excepting the bed floor, and that unfurnished by straw. The rays of the sun have a very powerful effect in modifying the functions of both animal and vegetable life. Many plants require a strong light, that they may perfect their organizations; others less; but few plants ever come to perfection without a full supply of light; common observation proves this. The potato growing in a cellar is colorless, fragile and worthless. The apple growing on the inside of the tree is often green, tasteless and imperfect, and the peach that has not been kissed by the rays of the sun, has not that high flavor requisite to its perfection. Without the sun, the leaves could never decompose carbonic acid from the air and assimilate its oxygen.

With animals the same is true. The sun does as much towards painting roses on the cheek as does a bracing air. The skin of those persons exposed freely to the light, performs its functions vigorously, while that of those too much shaded is feeble and easily disturbed. Physicians assert that people living on the shaded sides of streets in towns are more liable to sickness and less vigorous than those living on the side influenced by the sun. We have often noticed that children reared in shaded and damp situations, were scrofulous, imperfectly developed, and deficient in vitality. Rooms in which the sun never shines are gloomy and unpleasant. Dr. Winship, in his lecture on physical culture, so fully appreciates the importance of light, that he says he would always, if possible, select for his sleeping room an apartment on the "sunny side," and let the sun have full play, when it shines, six hours of the day. Animals like the sun's rays, except in the hottest of weather. True, they should have shade, if they desire it. That hogs should have sun, is more important than for many other animals; their habits are filthy, but the rays of the sun to a certain extent will correct their bad habits. We have little doubt but that much of the hog cholera is due to want of sunlight and damp situations. With these facts before us, who can fail to see the necessity of sunlight for all animals, if we would retain them in health.—*Homestead, Conn.*

Early Potatoes.

There are several methods of hastening the maturity of Potatoes. A favorite method with the German market gardeners is, to bring the seed potatoes in barrels into a warm room, about the first of March. The eyes start rapidly, and in about two or three weeks they are ready to plant. Another method, which we have practiced for some years, is to start the potatoes in a gentle hot bed about the middle of March. The tubers are cut in halves, and laid flat side down upon the bed, as thick as they can be placed.—They are then covered with about two inches of garden mould, and the sashes are put over them. As soon as they are up two or three inches, they are ready to transplant. They should be removed carefully, separating the roots with as little breaking as possible, and put in drills where they are to grow. As they do not yield a full crop under this treatment, they can be planted closer than in common field culture, say in drills thirty inches apart, putting the hills twelve inches apart in the drill.

A warm sandy loam, sloping to the south or southeast, should be selected for this crop. It should be well manured with horse dung, about half of it applied in the drills. Some manure their grounds for early potatoes in the fall, and this is, we think, a good plan for that part of the manure which is applied broadcast. Fresh horse dung in the drills raises the temperature of the soil, and hastens their growth.

We will add that we have succeeded well on a small scale, thus: Two or three weeks before the time when it will probably do to plant out, take take pieces of turf or sod, say four to five inches square, and put a piece of potato in each. These are set closely together where they can be watered at need, and can be exposed to sunshine.—Whenever there is a cold night, or "cold snap," straw is put on to keep them from freezing. They sprout and fill the turf with roots. At the proper time the pieces are set in the open ground, one piece in a hill, and the growth is hardly checked. The turf itself also acts as a manure to aid the growth. In this way two or three weeks may be gained.—*Agriculturist.*

Meteorological Observations *kept at Schellman Hills, Carroll Co., Md., Sykesville P. O.,* JANUARY, 1861. (*Reported for the American Farmer.*)

Day	THERMOMETER.				WIND.			RAIN	REMARKS.
	7 A. M.	2 P. M.	9 P. M.	D'y Mean.	7 A. M.	2 P. M.	9 P. M.	Inch's	
1	5	35	25	21⅔	W.	S.W.	S.W.	.....	Clear.
2	10	40	35	30½	W.	W.	W.	.....	Clear.
3	30	38	31	33	N.	W.	W.	1⅛	Cloudy; clear; rain began 6.30 P.M., end 6 A.M.
4	30	35	25	30	S.W.	W.	N.W.	.....	Cloudy; clear; 5.30 P. M. a flock of wild swans
5	25	39	26	30	W.	S.	S.W.	.....	Cloudy; clear. [passed from N.W. to S. E.
6	18	36	32	28⅔	W.	S.W.	S.W.	⅛	Cloudy; clear; rain in the night.
7	35	51	43	43	S.	S.W.	S.	.....	Cloudy; clear.
8	38	43	35	38⅔	W.	W.	W.	.....	Clear; cloudy.
*9	35	40	31	35½	N.E.	E.	N.E.	⅛	Cloudy; 8 A. M. began to snow, end 2 P. M.—1
10	28	40	25	31	N.W.	W.	N.W.	.....	Cloudy; clear. [inch fell; 2 P.M. began to rain.
*11	10	32	25	22½	W.	S.E.	S.W.	.....	Clear; cloudy; began to snow 5 A. M., ended 7
12	27	35	14	25½	S.E.	S.W.	N.W.	.....	Cloudy; clear. [P. M.—⅛ inch fell.
13	20	15	8	7	N.W.	N.W.	S.E.	.....	Clear.
*14	15	33	25	24½	E.	E.	E.	.....	Cloudy; began to snow 6 A. M., end 2 P. M.—
15	30	40	32	34	N.W.	S.	S.E.	.....	Cloudy; rain 7 P. M. [1⅛ inches fell.
16	35	45	40	40	N.E.	W.	W.	1	Rain; end 10 A. M.; clear.
17	37	43	33	34½	W.	W.	W.	.....	Cloudy; clear.
18	30	38	35	34½	W.	E.	S.W.	⅛	Cloudy; 8.30 A. M. began to rain; end 6 P. M.
19	34	50	40	41½	S.W.	S.W.	N.W.	.....	Clear.
20	28	35	28	30½	W.	W.	W.	.....	Clear.
21	20	34	23	25⅔	W.	N.W.	W.	.....	Clear.
22	16	30	20	22	W.	N.W.	W.	.....	Clear.
23	15	32	25	24	N.	E.	E.	.....	Cloudy.
24	30	41	34	35	N.E.	N.E.	W.	1	Rain; 6 A. M., end 6 P. M.; 9 P. M. fog.
25	34	41	33	36½	N.W.	W.	S.W.	.....	Cloudy.
*26	30	32	20	27½	N.E.	N.E.	N.W.	.....	Cloudy; snow began 10 A. M., ended 6 P. M.—5
27	10	33	19	20⅔	N.W.	W.	W.	.....	Clear. [inches fell.
28	27	36	16	26½	W.	W.	S.W.	.....	Clear.
29	26	49	40	39⅓	S.E.	S.	S.E.	.....	Clear.
30	30	27	20	25⅔	W.	N.W.	N.W.	.....	Clear.
31	10	31	18	19⅔	W.	W.	W.	.....	Clear.

*7⅛ inches Snow fell. Monthly Mean, 29 3-5. 4⅛ Inches Water fell.

HARRIET M. BAER.

Rough Notes on Milking Cows.

All Mechanical Contrivances invented for the purpose of Milking Cows are Injurious.

The first process in the operation of milking is to "fondle" with the cow—make her acquaintance—and thus give her to understand that the *man* or "*maid* with the milking pail" approaches her with friendly intentions in order to relieve her of the usual amount of lacteal secretion. It will never do to approach the animal with combative feelings and intentions; should the milker *swear*, *scold*, or *kick*, and otherwise abuse the cow, she may probably prove refractory as a mule, and may give the uncouth and unfeeling milker the benefit of her heels—a very pertinent reward, to which he the uncouth milker is justly entitled.

Before commencing to milk a cow, it should be fed, or have some kind of fodder offered her, in view of diverting her attention from the otherwise painful operation of milking; by this means the milk is not "held up," as the saying is, but is yielded freely.

The milker should be in close contact with the cow's body, for in this position, if she attempts to kick him, he gets nothing more than a "push," whereas if he sits off at a distance the cow has an opportunity to inflict a severe blow whenever she feels disposed to do so.

Before commencing to milk a cow, the teats should be washed with water, warm or cold according to the temperature of the atmosphere, the object of which is to remove filth which might otherwise fall into the milk-pail, to the disgust of persons who love pure milk, and hate uncleanliness.

Milkers of cows should understand that the udder and teats are highly organized, and consequently very sensitive, and these facts should be taken into consideration by amateur milkers, especially when their first essay is made on a young animal after the advent of her first impregnation; at this period the hard tugging and squeezing which many poor "dumb brutes" have to submit to, in consequence of the application of hard fisted, and callous fingers, is a barbarity of the very worst kind, for it often converts a docile creature into a state of viciousness, from which condition she may not easily be weaned. —Dr. Dadd, *in Stock Journal.*

If a cow will not let down her milk—have patience and keep milking.

The American Farmer.

Baltimore, March 1, 1861.

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☞ MR. WM. C. LIPSCOMB, JR., is our Traveling Agent for Maryland and Virginia.

The Rural Annual and Horticultural Directory.—We are indebted to Mr. Harris, of the *Genesee Farmer*, Rochester, for a copy of the above named little work, and accidentally omitted to acknowledge it last month. Among its valuable contents are articles on "The Farmer's Kitchen Garden," "A few words on Gates," "Shade and ornamental Trees," "Ornamental Fountains," and many more, all ably written and well illustrated. It will be found a very useful little manual. Price 25 cents.

☞ A subscriber at Point Coupee, Louisiana, writes for a copy of our December number, which he failed to get, and says: "I look for the *American Farmer* as regularly as I do for the daily papers. I cheerfully recommend it to all my agricultural friends. It is impossible to estimate the amount of valuable information I have gained from its pages."

☞ We are under obligations to E. Wright, Esq., Corresponding Secretary of the Massachusetts Horticultural Society, for advance sheets of Reports of the several Committees of that Society.

Affleck's Southern Rural Almanac.—We are under obligations to Mr. Affleck for a copy of this annual. It has a very useful Calendar for for the Plantation and Garden in the Southern States, and much other valuable matter.

☞ We have received a note from S. W. Ficklin, Esq., of Albemarle, objecting to the report published in our January number of award of premiums for swine at Richmond, on grounds as stated in the accompanying extract. We would say with reference to our publication, that our recollection of the matter is, that we received a number of the "Richmond Dispatch," with the report on swine marked for notice, and that it was in type when the "Southern Planter" was received. The brief notice of other matters connected with the Fair was made from the *Planter*, and this swine report attached. We presumed, as a matter of course, the latter was all right. Mr. Ficklin's explanation is as follows:

"The facts are these: the Chairman of the regular Committee on Swine, with two others, had two meetings and had an appointment for a third, but the two failing to attend, the chairman, W. M. Tate, of Augusta, closed and signed the report, as such, and it not giving P. Johnston, of Richmond, a single premium, he protested on some ground of irregularity, and the Executive Committee ordered the selection of a "*provisionary* committee," as styled by President Lyons, to go over the same, and when they heard from Mr. Tate the particulars of his action, the Executive Committee would decide what to do. These men went late to work and acted on the boars, and stopped for the night, and next morning but one of that committee was present—when three others were appointed, with a Mr. Garlick, and they finished what they understood had not been acted on. This revising committee found first class merit in several boars, and second in another, where I had first in boars and sows over two years, and second in boars and sows under two years, and others—*not* Mr. Johnston's—the third premiums. This was well understood by all interested, and any effort to give currency to any other impression was premature at least, when the *regular* committee was the proper authority till the contrary was shown by the decision of the Executive Committee."

CANTON, MISSISSIPPI.—A correspondent writing from Thomastown, Mississippi, and whose depot is *Canton*, says: "This I think is the finest opening for some of those engaged in the business to establish a depot for fertilizers." Our friend sends a long letter, but we find it too "political" for insertion in our pages.

Good air is as necessary to health as good food.

The Right Use of Agricultural Journals.

It is not a little remarkable that whereas the large proportion of intelligent farmers understand and duly appreciate agricultural journals, and many become so attached to the one they have been habitually reading, that however they may be disposed to economise, the small expense of an annual subscription is one of the last they will dispense with, it is nevertheless true, that a large proportion of farmers read no agricultural paper at all, and very many are so prejudiced against what they term book farming, as to reject whatever they teach and ridicule those who use them. While this no doubt is the effect, in some cases, of that overweening self-conceit which too often accompanies stolid ignorance, and in others a pretext for the stinginess which begrudges the expense of a dollar; it is well nevertheless to see that the prejudice is not justified. It may not be denied that agricultural Editors have something to answer for in this matter. When men assume to teach and to gather into a journal reliable information for the use of others, the presumption is that they have some real, actual knowledge of agriculture which may enable them to write themselves, and which may serve to inform and correct their own judgment as to the value of the writings of others—either of those whom they may employ, of those who volunteer, or whose contributions to other journals they may use in the way of selection. It is our good fortune at this day, that there is so much useful matter published in our numerous journals that no one can easily fail to get together a dollar's worth, or much more, in the course of a year into a journal, and critical readers will have no difficulty in discriminating between the good and the worthless, yet the evil done is to those who while they are most in need of judicious counsel, are least able, from their own want of experience, to sift out the wheat from the chaff—we mean the most promising class of readers, the young farmers of the day. They are misled, and their misfortune is charged to book-farming.

Another difficulty is that there are reading and talking and writing farmers who are very apt to get the term "book-farmer" attached to their names, yet who are so deficient in practical talent, that their practice is a standing reproach upon their book learning.

Again, young farmers who take agricultural journals of whatever character, are apt to place undue reliance upon them *as guides*, and the failures of such is attributed to their reading, when it is the fault of their not reading rightly. We cannot too earnestly warn our young readers, that it is not possible they can learn practical agriculture, in its routine and detail, from an agricultural journal. They had better throw journals and books to the dogs, than place implicit confidence and undertake to follow in practice all that they see printed. Those who would thus use an agricultural journal mistake its office. Instead of striking out for himself a new and ambitious course which he mistakes for agricultural progress, let the young farmer who is without experience avail himself of that of some judicious neighbour, until he may rely upon a judgment of his own, based on his own experience, and informed and enlightened by all the knowledge he may gather from journals and books. As an intelligent man he cannot dispense with a journal, but let him use it in his practice with the careful discrimination with which he would select in the market place, food for his bodily sustenance.

In this connection, we will place the suggestion of a cotemporary, as to the duty of farmers of experience and intelligence. We beg our readers to mark it, and to profit by it.

"He who finds in his agricultural journal an article or articles which his own tried experience has taught him to know, are not based upon correct principles, and therefore calculated to mislead the general reader, fails to perform a duty he owes his fellow-farmers if he does not at once point out the error to those who have given it publicity. He does not make a proper use of the paper if he remains silent, and permits the error to multiply itself, perhaps, through a dozen other similar publications. What an immense amount of hurtful theory would be done away with, were this wholesome method adopted? How many thousands of dollars would be annually saved? How much greater amount of confidence and support would be extended to the agricultural press, and as a necessary consequence, how largely would the substantial interests of our husbandry be promoted? What writer would be willing to advance a theory which he could not sustain by the unerring tests of science, or which, within his own personal knowledge had not borne the test of thorough practical experiment? We should then have such an array of sound, reliable information, as would at once inspire confidence, and thus greatly aid agricultural journals of the country in the performance of their legitimate mission."

It is better to know useful things than many things.

Our Old Fields not worn out—Supply of Mineral Elements.

It has been our luck, more than once, to have presented views differing materially from those commonly received, and have them passed over for a time unnoticed, but after a year, or two or three, to find them revived and taking a course of discussion through the journals of the day. It is evidence, we hope, that some of our contemporaries are in the habit of laying aside the *Farmer* for a rainy day's reading, and that the seed which we sow are good seed, which, if they lie dormant for a while, will bring forth their fruit at some time or other We find an instance of the kind in the very ample discussion the topic above has had, in the Northern Agricultural papers for some months past.

We notice, however, more particularly now, an article in the January number of the *Southern Planter*, by Dr. P. B. Pendleton, of Louisa county, in which occurs the following passage: "*There is no sort of proof, chemical, agricultural or otherwise, that a generality of soils, no matter how worn and exhausted by continuous cropping, do not contain, naturally, an ample sufficiency of every mineral necessary, to meet in any judicious rotation, the demands of any ordinary cereal crop for many centuries to come.*"

This paragraph is italicised by Dr. P., to call attention to it, we presume, as a remarkable and perhaps original observation. We do not mean to apply to him the remark made above, because we have reason to fear, that though always a subscriber, he has not thought it worth his while to read the Farmer very carefully. But it is a satisfaction to know that that distinguished gentleman and ourselves, when we think on the same subject, are apt to think alike, and at this time at least, we can claim to have published our views in advance of him. We quote from page 273, vol. xii, of *Farmer*, just four years ago, as follows:

"*The deficiency of what are called the mineral elements of plants in our apparently worn out soils, we have no doubt, is greatly exaggerated. We have tilled a few inches of the surface for a long series of years, and the soluble portions of these minerals have been taken up or washed away; but take the average of our arable soils to the depth of twelve inches, and, we have very little doubt, that they are sufficient, with a judicious course of cropping, to last a century, and perhaps many centuries.*"

As it is a point of very great interest in the improvement of our lands, it is worth while, perhaps, to reproduce here the reasoning on which the observation was based, and the practical suggestions to which it gave rise.

"Let us bear in mind the high degree of fertility to which many portions of the country have been brought, from a state of apparently hopeless barrenness, by the use of organic manures alone, the clover-crop, the pea fallow, &c., and we will not conclude too readily that these lands are destitute of the inorganic elements. Think, too, of the present condition of the arable lands of the old countries. A late writer, whose remarks have been extensively quoted, says:—'We hear in America much of the exhausted soil of Europe. I have seen none of it. So far from being exhausted, I think the soil of Europe is now better than ever.'

There is no reason to doubt the fact, but how can this be? The writer attributes it to their excellent system of manuring. But what sort of manuring? Remember that the most perfect system of manuring can scarcely return the mineral or inorganic matter that is consumed upon the farm. But every pound of grain and of food consumed away from the farm, takes off some portion of these mineral elements, which are irretrievably and forever lost to the soil. Now estimate the countless millions who have been consuming these elements, in cities, in manufacturing towns, in travelling by sea and by land, and that for centuries, and how small will appear the amount restored to the soil, compared with what has been forever wasted. It is almost as nothing. Even the bones they use are mainly the product of their own soil. And the few bones they get from other countries, some lime and magnesia from their rocks, and guano of late years, have been substitutes of the waste of centuries. Yet 'their lands are richer than ever.' Let us take heart then, and dig for these minerals as for hid treasure. They are a mine of wealth hidden under the very heel of our ploughs. Bring them up to the atmosphere, open them to the rains, mix them with decomposing barn-yard manure, or a rotting clover sod or pea fallow, and be sure of the result. The earth is not yet worn out by a great deal, it wants mainly proper working. Our 'manifest destiny' is not to be cut short by famine, even if science fails to supply us with better lights. Let us only work faithfully up to our present knowledge.

The mineral elements of plants are present in the soil in a soluble state, and available for plants, or in chemical combinations which require to be broken up. This last is a gradual and slow process. Nature thus husbands her resources. Nor will she dispense her gifts too

freely to those who do not properly seek them. It may be very good economy to use phosphates and other mineral substances in a well prepared state, even when they abound in the soil, if they are not there in condition to be taken up. But what waste it is to spend our money upon these, and fail to use the ready means to make what we have in our hands available. The action of the atmosphere, the dissolving power of rain and snow water, the freezing and thawing of the soil, the vital power of the plants themselves, are forces operating continually to bring them into use. Closely packed down beneath the plough, they have been out of the reach of these influences. It is our business to bring them into use, and get the benefit of them, by the application of proper means. Of these, deep and thorough digging is the first; the use of green crops with their supply of ammonia and carbonic acid, is another. These perform the double office of furnishing organic elements, and bringing into use the inorganic. The effect of lime is doubtless owing mainly to its action upon these minerals. The great chemist Liebig, attributes the action of Peruvian Guano chiefly to its power of dissolving them. We believe he is right, and that its marvellous effects are due to the large store of mineral elements lying dormant in all our old fields, but put in action by this supply of ammonia."

[For the American Farmer.]

Butter Making in Winter.

Strain the milk just from the cow into a cylindrical tin bucket, which place in a vessel of hot water, and let it remain until the milk is decidedly warm, but not hot; then strain it into crocks. All things are managed in the usual way until churning time, when one-half of the cream is treated just as the new milk was by warming: then pour the warm and cold cream together in the churn, when from twenty-five to thirty-five minutes churning will be sufficient to produce butter of good quality. Before this method was adopted, the churn was going all day, and if butter came at all, it was of very inferior quality. Sometimes, after churning from morning until night, it would be abandoned. The above method was then adopted, and the result has invariably been good butter in less than thirty-five minutes. B.

Milch Cows—Garlicky Pastures.

Will the *American Farmer* please obtain and publish the best way to obviate the unpleasant consequences resulting from milch cows feeding on garlicky pastures. As the spring is at hand, it is very desirable that the information be given in an early number. B.

HOUSEKEEPERS' COLUMN.

We should be glad to fill a column with matters which would be useful to housekeepers, if we could get them from original sources, or rather from ladies who have tried and *know* what they send us to be good, whether original or not. Too often, we have had reason to think, the republished recipes we find going the rounds, were copied from some book made up as well for sale as for use, and by no means to be relied on.—For this reason we have generally eschewed them, but occasionally, by some accident, one or more of such have found their way into our pages, somewhat to the disgust of a certain lady of our acquaintance. As for instance, a recipe to make "lemon pudding out of turnips seasoned with tartaric acid," and another one to make "buttermilk pie." For our own part, we do not see that turnip pudding or buttermilk pie are very bad things, if made right, and that is the question. They are probably economical, and that at least would suit "the times." At any rate, if the lady readers of the *Farmer* leave the housekeeping to the Editor they need not look for any thing better.

The following however are announced "by authority," and may be relied on as good. We remember in our pryings, as a boy, into the pantry and kitchen, what time and work it took to get up a supply of calves-foot jelly. There are housekeepers still who follow the old way. Let them try this. Those who like cranberries will find this preparation an improvement upon any other we are acquainted with, and a beautiful dish for the dessert; the Italian cream is equally fascinating. Nevertheless we (the Editor) don't give up the turnip pudding nor buttermilk pie until we have a chance to try them. We ask our housekeeping friends to help us out in the effort to get up something good to eat.

Jelly.—To one package of Cox's Gelatine add one pint of cold water and the juice and rinds, pared very thin, of three fine lemons, and let it stand one hour; then add three pints of boiling water, half a pint of Madeira wine and one and a half pounds of crushed sugar; stir it until the sugar is dissolved; then strain it while hot through a piece of thin muslin and set it away to cool.

Cranberry Jelly.—To two quarts of cranberries put two quarts of water and boil three-quarters of an hour; then strain it through a colander, mashing the berries with a spoon to extract all the juice. Season it with two pounds o white sugar, a dessert spoonful of powdered cin

namon and the grated rind of one large lemon. Set it on the fire again, and when it begins to boil and the sugar is dissolved, stir in gradually six tablespoonfuls of corn starch, made into a paste with a little cold water. Let it stand a few minutes, then pour it into moulds that have been dipped in cold water, and set it away to cool. To be eaten with cream.

ITALIAN CREAM.—Three pints of milk, one package of Cox's Gelatine, the yolks of six eggs, six spoonfuls of sugar; season with Burnett's Extract of Vanilla. Dissolve the gelatine in the milk, and when it begins to boil, stir in the beaten egg and sugar, then take it off the fire and add the vanilla, stirring it until cool; then pour it into moulds which have been dipped in cold water.

Use of Muck.

To the Editor of the American Farmer:

I notice in the last issue of the *Farmer*, a communication upon the above subject. We up here in New Hampshire use a great deal of muck; some of our best farmers get out a large quantity every winter; the frost acts upon it and makes it easy to handle; a portion of it is stored under cover, after having been partially dried and used in a trough behind the cattle in winter. Into this the excrements fall and the urine is readily absorbed. For bedding, many of us use forest leaves, and you may depend upon it, the land upon which this manure is put tells a good story.

I have tried an experiment with my stock this winter, by taking up my *entire stable floor*, and let my cattle stand upon their manure. I put leaves and muck enough in to keep them dry. Now I would like to know what objection there is to this method? The distance from the bottom of the cellar to the scaffold over-head is seventeen feet. A space three feet wide, running the whole length of the stable, is open on a level with the barn floor; this I can close at pleasure; it serves as a ventilator and feeding place. As the stable fills up, I elevate the crib so that my cattle are well accommodated as to the matter of feeding. There is no perceptible odor arising from the manure except when disturbed by fork or spade. I propose to lower the bottom of the stable three feet into the ground, and cover it with cement. This will prevent any loss from the manure and all evaporation from the ground. Into this I will put muck and loam enough to fill it when pressed down by the cattle. Now what will be the practical result of the plan? Can any reader of the *Farmer* predict?

EXCELSIOR.

Weare, N. H., Feb. 8, 1861.

[For the American Farmer.]

Domestic Fowls for Farmers.

I have been much interested in reading the articles in the *Farmer*, by J. Jacob Bower, on birds and poultry, but in the last number, in an article on the domestic fowls for farmers, he has made some discrepancies which I propose to notice. And first as to species, he has confounded variety with species. There are many varieties, but only one species of domestic fowls as mentioned by him. The turkey is one species of fowls, the Guinea hen is another, the pea fowl another, and the different forms, color and features of each make varieties.

Again, he seems to think that "if a fowl which has been raised in or is a native of a warm country, is placed out in our climate," the cold will "affect its constitution"—and yet, in giving the characteristics of the different varieties mentioned, he approves most of those from warm climates. The "Jungle Fowls," he says, are natives of India, and "the American climate will not suit them." Most of India is situated within the Temperate Zone. The "Silk Fowls, natives of China, India and Japan"—"the cold of our climate is unfavorable to them"—yet a good deal of China, India and Japan is in the same latitude as the United States. The "Rumkin Fowls, natives of the island of Ceylon, suit our climate," and yet Ceylon is almost exactly under the Equator. "Bantam, a native of Bantam, in India," suits our "climate," and yet Bantam is just within the Northern Tropic.—"Crested Fowls, natives of Normandy," our climate will not "suit," and yet Normandy is several degrees North of this latitude. "Dorking Fowls, natives of England, will not suit our climate," and yet England is much North of us, though not so changable a climate. "Black Spanish Fowls, natives of the Netherlands," do not seem to suit us, and yet they come from North of Germany. "Shanghai, a native of China, agree well with our climate," but have some objectionable features. "Game Fowls, natives of Calcutta," he considers the best, all things considered, and yet Calcutta is within the Tropics. He has not tried the "Brahma Pootras, Buck's County or Jersey Blues," and thinks them only varieties, and yet all he mentions are only varieties and all of one species. We here think the Brahma Pootra the best fowl amongst us. Its name would seem to come from India. They are large, not so large and coarse as the Shanghai, but more compact, nearly white color, good layers, and seem to suit our climate well; we value them highly.

YARDLEY TAYLOR.

Disease among Poultry—Sorrel and Lime—Draining.

To the Editor of the American Farmer:

I have bestowed a good deal of care, and some money, in the effort to provide myself with a good henery, and to improve the breed of fowls. My object has been to obtain, if possible, a breed of fowls for the table with the hardihood of the game cock and the size of the Shanghae or Cochin China. With this view I keep a yard of pure game fowls, and a henery in which I mingle the game, Shanghae, Cochin China, Brahma Pootra, and common dungle, and am succeeding tolerably well. But my fowls of all kinds have been attacked with a disease which I do not understand and cannot cure. It begins with running at the eyes; then the eyes and head swell until the bird becomes entirely blind, when the eyes generally burst and the poor bird dies.—Sometimes the eye does not burst, and the bird recovers, and sometimes a shivering fit comes on before the swelling of the eyes, and the bird falls over in a spasm and dies. The disease is confined to no breed or age. The pure game, the mixed, and all others suffer alike, and I can trace it to no cause, as the fowls are all well taken care of and fat. Can you tell me what is the disease and what the remedy for it, or aid me in discovering both?

I remark that Dr. Pendleton and yourself have a little discussion upon the question whether lime will destroy sorrel. As this is a question of much interest to all farmers, will you allow me to say a word or two upon the subject?—Dr. Pendleton is a man of high character and intelligence, and therefore whatever he says is entitled to much consideration, and I dissent from his opinions with much diffidence. I cannot however concur in his opinion that lime alone will destroy sorrel.* Sorrel is the product of moisture and poverty, but principally of moisture, in my opinion, and nothing will remove it while the land continues wet, and certainly not while it continues wet and poor. My opinion is founded upon my own observation, and principally upon the following fact, viz: Some years since I had a piece of meadow land which was literally a bed of sorrel. I ploughed it well and limed it, and sowed it in grass, but more sorrel than grass came. I ploughed and limed and sowed it again, and still the sorrel predominated, and I repeated the lime until it produced nothing but sorrel. I then determined to try draining and manure. I drained the land thoroughly, and ploughed it again and gave it a heavy top-dressing of stable manure and sowed it in grass, and the sorrel disappeared and a luxuriant crop of grass appeared.

Very recently I have made a similar experiment, using tiles for under-draining, and the result has been the same—the sorrel has disappeared, and the land produces twenty-five bushels of wheat to the acre. My conclusion therefore is, that in order to get rid of sorrel you must first drain your land thoroughly and then make it rich, in doing which you must, of course, use lime—but the lime has no specific effect upon the sorrel, because if it had it would destroy the sorrel even while the land was moist and poor, which it will not do. If the land be of good quality, and have no more moisture than deep ploughing and lime (which you know is very drying) will remove, and is deficient in lime, then deep ploughing and liming may destroy the sorrel because of the drainage and the perfection of the soil by the addition of lime. Indeed, I cannot repel the doubt that the theory which likens unproductive soils to dyspeptic stomachs, and supposes there is an acidity in them to be cured by an alkali, is erroneous, and of this I think we have abundant evidence. For instance—pine is an acid plant, judging it as we do sorrel, by the taste of its leaves; yet on James River, where the marl beds are twenty feet thick and the top soil scarcely a foot, the earth is covered with very large pines, which derive their sustenance, in great part, from the marl. Again—you may go into the finest wheat-growing region and cut down a forest of oaks, and a crop of pines will spring up. The truth is, as it seems to me, that when the land is really fertile, possessing in proper proportion all the elements which constitute fertility, everything else in its production depends upon drainage and climate. The land which produces tobacco has no taste of tobacco, and so of melons and pepper; and the same land will produce each equally well, while no land will produce either if the climate is unfavorable—and yet more do the natural productions depend on climate and water.

Richmond, Va. LABURNUM.

*Cur correspondent misapprehends Dr. Pendleton's position on this point. It was Mr. Edmund Ruffin who maintained that "lime alone would destroy sorrel," and that "some soils are acid and cannot be improved without lime," and it was this latter proposition that Dr. P. controverted,—EDITOR.

ROSE BUGS.—These pests can be certainly destroyed by syringing the bushes with a solution of whale oil soap, two pounds in fifteen gallons of water.

Sorrel, Sedge Grass and Lime.

A CLAIM FOR MISSISSIPPI.

EDWARDS, Miss., Feb. 8, 1861.

N. B. Worthington, Esq.,

DEAR SIR: Reading your February number of the *American Farmer*, sent to Dr. H. Hinkley—who, with his family, is sojourning with me, coming back to "the sunny South" from the ice-bound and dark regions of the prairies of Illinois—I see your and Dr. Pendleton's explanations about lime, sorrel, broom sedge, *et multis aliis*. My writings have been for so many of our agricultural periodicals, and I have been so indifferent to the voice of fame, that I cannot possibly lay my hands upon writings of mine upon this vexed question—but it is no less true, that I did, some ten years or more ago, dissent from our sterling agricultural writer, Mr. E. Ruffin, as to his opinion about the need of lime upon lands producing sorrel, sedge grass and the pine. None of my lands produce the pine naturally, yet a few have made their appearance since I settled here thirty years ago. I remarked years ago that there was growing here two vegetables, commonly known as sorrel, one with a yellow, the other a purple bloom, and sedge grass that would do to show to the lower district farmers in Virginia as a curiosity. I have had in my house a stalk of sedge grass over eight feet high, and growing upon land subject to overflow, in high water, and from whence I burned off the cane twenty-eight years ago, which was twenty to thirty feet high. Said land is good for two thousand pounds of cotton or fifty bushels of corn. There are perhaps on this farm of 1200 acres about 100 to 200 acres of rolling land, a small portion abrupt ridges. Upon any portion of the cleared land and much of woodland, where open to the sun, the sedge grows thrifty. Just so is the fact in a large portion of this region, even five to twenty miles from the pine region.

It has been a long time since I opened Mr. Ruffin's excellent work on Calcareous Manures; yet, if my memory serves me, Mr. R. says, somewhere, one evidence of a want of lime is the non-decaying of leaves, &c., on or under the soil. Here the leaves of the forest trees decay readily in the woods, the leaves of cotton, peas, blades of corn, grasses, weeds, &c. all decay on or in the land as readily as I ever saw them elsewhere. Yet sedge grass is as plentiful here, much larger in the straw and much taller than in the district of Richmond, in South Carolina, where I was permitted to first breathe and to be educated. Substantially, these remarks I made years and years ago—I think I cannot be mistaken in saying over ten years ago—yet I forget when Mr. Ruffin published his opinions; I have them in my library. All I care about the matter is, Mississippi has a little claim—for myself I ask none.

Sincerely do I hope the times will be yet propitious for Southern papers. When memory recalls John S. Skinner, the pioneer of agricultural writings, his labor of love, the father of the "American Farmer" as well as of American farming—to think of all his anxieties, labor, no profit—candidly my faith fails me. I own the fifteen first volumes of your paper; I followed for years its editors, corresponding privately with Skinner, Hitchcock, Smith, &c., and yet where have we its superior? May the Lord guide and direct us. May we do credit and justice to our own people and not bow more to Baal.

Yours, &c. M. W. PHILIPS.

Experiments with Fertilizers in N. Carolina.

MULBERRY HILL, Chowan Co., N. C., February 4, 1861.

To the Editor of the American Farmer:

Annexed I send the result of my experiments in the use of Guano: One acre without Guano or any manure yielded in cotton, as weighed from the field, 489 pounds; one acre, by the application of 200 pounds of American Guano, produced 704 pounds; one acre, by the application of 200 pounds of Kettlewell's Manipulated Guano, produced 778 pounds; one acre, by the application of 200 pounds of Peruvian Guano, produced 1010 pounds. There was no difference in the strength of the four acres to which I have alluded. I used ten tons of the American, two tons of Kettlewell's, and one ton of the Peruvian. I made some experiments on corn, at the rate of 200 pounds per acre. The American did no good at all, and the other kinds but little, owing to a severe drought. The excessive rains in August caused the squares to leave the lower limbs of the cotton to such an extent, that it was often the case that only one or two bowls could be found on them, and they were near the end. The fall was backward, and the late bowls matured very well.

The Guano was applied in the drill and two furrows turned upon it *four weeks before I planted*. You are at liberty to make any use of this statement you may think proper.

Yours, very respectfully,

JOHN H. LEARY.

Inspection of Grain, &c.

To the Editor of the American Farmer:

DEAR SIR: As your paper professes to be open to the protection of the farming and plantation interest, as well as for instruction, &c., you will allow me to make a statement of how the farmers are imposed upon by those to whom they have entrusted their property—I mean the carriers, commission men, inspectors, &c., in the sales of grain. If their charges were made according to the actual amount of grain sold, there would be no complaint, as the manner in which their accounts are made out will show. For say 2000 bushels their bill shows thus:

Sale of Grain per schr. .....

CAPTAIN .....

BY ....., COM.

FOR .....

2000 bushels of Wheat, w'g 1900, at ....

CHARGES.

Freight on 2000 bushels at 4 cts	$80 00
Commission on same at 1 cent.....	20 00
Inspection at 1 cent.....	20 00
Measurement on same at ¼ cent.....	5 00
	$125 00

When in reality the bill should read thus:

Sale of Grain per schr. .....

CAPTAIN .....

BY ....., COM.

FOR .....

1900 bushels of Wheat at..... ....

CHARGES.

Freight on 1900 bushels at 4 cts.....	$76 00	
Commission on same at 1 cent.....	19 00	
Inspection at 1 cent	19 00	
Measurement of same at ¼ cent	4 75	
		$118 75
Leaving.....		6 25
The freight on 100 bushels, running measure, of which the Captain gets for his share.....		$4 00
Commission		1 00
Inspection.....		1 00
Measurement.....		25
Making.....		6 25

Which the farmer pays for something he never had. As the law allows but sixty pounds per bushel, so the captain, &c. should be paid by that standard; if grain weighs above the standard they should be paid accordingly.

JUSTICE.

Eastern Shore Maryland.

POTS in which seeds are planted for bedding out, &c., should be plunged in something to keep the outsides of the pots from getting too dry, and from being hot and cold alternately; the seeds thus require less water, and the less they are obliged to have the more healthy the plants will be.—*Horticulturist.*

The County of Albemarle, Virginia.

To the Editor of the American Farmer:

In compliance with the request in your January number, I have thrown together a few random remarks respecting this beautiful section of this noble old State, occupying at this time so conspicuous a position before the people of her sister States. The county of Albemarle lies on the eastern slope of the "Blue Ridge," her southern border being washed by the beautiful James River, and the splendid canal which is now about to be pushed with so much vigor to its western termination on the Ohio, by the wealthy company of French capitalists, who are now making negociations with the State for the purchase of her interests in this magnificent work, already completed to the extent of over 200 miles from Richmond.

The soil in the southern portion of the county, with which I am most familiar, and where I reside, consists principally of the two classes of soils known as *gray* and *red lands*, both originally very fertile, and forming some of the most productive wheat and tobacco lands in the celebrated *"Piedmont" region* of Virginia. These lands, in some cases, have been much impoverished by reckless and improper cultivation for almost a century, and the entire absence of any attempt at improvement by a proper rotation of crops, or the application of lime, or sowing of grass lands, but I have never in my experience as a farmer, seen lands more susceptible of improvement or more readily brought to a high state of fertility, and I am perfectly satisfied that a large portion of the now exhausted lands of this beautiful region could be readily and permanently improved by the application of clover and plaster, with *rest*, followed by a proper rotation of crops, and more attention paid to the raising of stock of all kinds.

In the fall of 1855, I passed, for the first time, through the southern portion of this county, from Charlottesville to Scottsville, on James River, to take the canal boat to Lynchburg. I was then on my way to the south-western portion of Virginia to examine lands near the Tennessee Railroad, but found nothing very attractive in that section, and property about double the price asked in "Albemarle." On my return to Maryland, during the following spring, I sold my farm in Baltimore county, about ten miles from the city, at $120 *per acre*, and bought what was called a *highly improved farm*, in Albemarle county, for $20 *per acre*. A good exchange, you will say, and one with which, after five years of experience, I am in every way well pleased. I

am three miles from the canal. My lands are based upon the celebrated *chocolate formation*, being admirably adapted to wheat and grass, and producing the heaviest and most desirable kind of shipping tobacco.

I consider this as one of the healthiest regions of country in the United States, and our climate delightful and attractive in the extreme at all seasons of the year, with refined society, unsurpassed in the State, with every access by railroad and canal to all the markets on the seaboard, and which are never stayed by frost or snow—make up for this very desirable section of Virginia a combination of advantages which are just beginning to attract the attention of intelligent farmers from other sections of the State, as well as those beyond her border.

We have had an unusual quantity of snow this winter, but our climate generally at this season is delightful, and we commence gardening the latter end of February. The winter of '59 and '60 was so mild and balmy that the song of the *frog* never ceased during its continuance, and I have heard these cheerful songsters, with short intervals, even during the inclement weather of the present winter.

This county enjoys unusual advantages in the education of youth, the chief of which is the noble "University of Virginia," situated near the centre of the county; there are also an unusual number of ably conducted female Institutes, which rank deservedly high in the estimation of the community. We have two important lines of railroad traversing the entire county—the "Virginia Central" and the "Orange and Alexandria" road—the latter forming the great central route from Boston to New Orleans—now fully completed and the cars running daily.

A. P. GILES.

Scottsville, Va., Feb. 7, 1861.

Will not our correspondent oblige us with some account of his own farm improvements?—EDITOR.

A Question respectfully submitted

TO THE READERS OF THE AMERICAN FARMER.

There are two fields—one of them has been managed in the usual manner, and is now capable of producing fifteen bushels of wheat per acre, and consequently is worth only forty dollars per acre; while the other has been so well improved by superior management that it is capable of producing thirty bushels of wheat per acre. The question is, what is it worth per acre upon the same data? Please furnish the figures. B.

Composting in North Carolina.

The following from a correspondent in Edgecombe county, N. C., will give some idea of how they manage composts there.—ED. FAR.

Our farmers are very busy making composts at this time. We put from twenty to forty bushels cotton seed to one hundred five-bushel loads of ditch banks, marsh mud or scrapings from the road sides, fence-jams or woods; some use guano in the composts; some by itself, and some not at all. Some think guano causes rust, and others think it less liable to it where guano is used. I find fresh ditch or canal banks or marsh mud that is much under water, though composted, is much more likely to be attended with rust in cotton than high ground scrapings. A compost made of one bag of Peruvian guano, thirty bushels of cotton seed, forty bushels of ashes and fifty bushels of marl and one hundred and fifty loads of good scrapings, applied to an acre of weak piney land, will make an excellent yield of cotton. I raised about 24,000 pounds of seed cotton on twenty acres, last year, with less ashes and marl than I here recommend in the compost. Stable manure composted makes an excellent manure for cotton. I think the more different varieties of manure in the compost heap the better it is for cotton; it is less liable to disease and is apt to make a better yield. Land that has been cultivated in cotton many years in succession, is much more difficult to get a good stand on in the spring, and seldom yields the crop that ought to be expected of its strength unless it is heavily manured with manure different from cotton seed compost. We work our land too hard; cotton all the time as long as even a tolerable crop can be obtained, then corn, or, in some cases, rest; afterwards cotton again—and so we go along.

Our next great improvements in farming, in my opinion, must consist in underdraining our land and rotation in crops. We already work hard enough, and manure abundantly, and cultivate our crops nicely. I thought you would like to hear what we are up to in Edgecombe, and for that reason I have hastily written these few lines. Very respectfully yours,

JOHN G. RIVES.

The righteousness which the Jews sought from the Law, was not so much the righteousness of the Law as their own; not such as God demanded of them, but such as they had foolishly imagined for themselves, the fiction of their own foolish brains. This St. Paul properly called a righteousness of their own, opposed to the righteousness of God.

"Shallow Ploughing—The Great Error in American Agriculture."

About sixty years ago, a little work with the above title was published in Maryland, the author of which was Thomas Moore, of Montgomery county. It is said to have made a great impression at the time it was written, and to have caused for a while quite a furor on the subject of deep ploughing. A large proportion of those who were disposed to follow his teachings at first became discouraged and gave up the practice, but we have thought sometimes that the excellent practice of the Quaker farmers of Maryland was owing to the fact that they were more impressed than others with the lessons of Friend Thomas Moore. This little work is long since out of print, and only occasionally a copy is found in Maryland farm houses. Thinking it worthy of reproduction, we give here an extract, to be followed by others hereafter.—Ed. Farmer.

"These things being premised, I shall, without further observations, proceed to the subject matter, and endeavor to enumerate some of the evils inseparably attached to that great error in American agriculture, *shallow ploughing;* beginning with new lands, or those just cleared of wood.

What is the language of our farmers and planters on these occasions? Our soil is not more than two or three inches deep; we must plough *shallow*, otherwise we shall turn up too great a portion of *dead earth*, and ruin our crops; they also say, we must plant *wide*, otherwise a drought will cause our corn to fire;* and for these supposed weighty reasons, those two practices are almost universally adopted on new lands, to wit: shallow ploughing and wide planting.

Here our men of experience prove they are acquainted with the effect, without knowing, or even enquiring into the cause. Their mistaken opinion, respecting dead earth, will be noticed in due place; but it remains here to be proved, that the necessity of wide planting is one of the consequences attached to *shallow ploughing*. All plants imbibe moisture from the earth, by their roots; if this portion of their sustenance is withheld, though every other species of vegetable nutriment abounds in the soil, the plant becomes sickly, growth ceases, and finally death ensues. In search of the necessary supply, the roots of plants are extended in all directions, where the soil is open enough to admit them, and to a distance, proportionate to the demand; two plants of the same kind require a greater quantity, to preserve health, than one; hence it will appear, that a drought of sufficient duration to extract most of the moisture contained in that part of the soil, loosened by the plough, may yet leave sufficient to preserve one plant in health; but if divided, both must suffer, for neither can penetrate the hard unstirred earth below, for a supply. But in case of long droughts, no distance whatever will insure Indian corn from suffering, when the under stratum is hard and the ploughing shallow, and under these circumstances few summers are so wet but that close planted corn, at some period of its growth, discovers the want of a full supply of moisture, which perhaps might be amply afforded by one or two inches greater depth of ploughing. They have discovered that after the first year several succeeding crops will admit of being *closer* planted: the fact is, that the surface having now been for some time cleared of leaves, rubbish, &c., and exposed to the action of frost, sun and dews, that portion of earth, lying originally immediately below the black mould, and called dead earth, which was turned up by the cultivation of the preceding year (for in common soils, it is almost impossible to plough so shallow as to avoid turning up some, in new grounds,) has now acquired a dark color, and therefore not known to be the same; and some of the obstacles to ploughing being removed, they almost insensibly go an inch or two deeper without shewing any greater appearance of the yellow or dead earth, so much dreaded, than the preceding year: this furnishes a more extensive pasture* for the roots of the plants growing therein, and also because a more copious reservoir for treasuring up moisture for the needful time; and consequently affords a supply for a greater number of plants. The second year is generally found to be much more productive than the first, after which our common lands gradually decline.

The undecayed fibrous roots prevent much loss of soil by washing, the first year, on lands not perfectly level; it generally begins the second and continues annually. The ploughing being about four inches deep, does not afford a sufficient quantity of loose earth to imbibe the whole of the heavy showers that frequently fall during summer; the consequence of which is, as before observed, that when the open soil becomes *saturated*, water must accumulate on the surface, and flowing off in torrents, bears away a portion of the finest and most valuable part of the soil;

*The lower leaves turn yellow.

*For want of a more appropriate term, the word pasture is used to express the body of loose earth into which plants freely project their roots in quest of food.

succeeding ploughings brings to the surface a fresh supply of mould, which in turn follows the last. Thus ploughing and washing alternately, following each other; the original soil is soon deposited in sunken places, beds of creeks, rivers, &c.

This waste is in some measure compensated, and fertility continued, by the fresh earth brought up from below; for the plough continuing to pass about the same depth, must of course descend into the unstirred earth, in proportion as the open soil is carried from the surface; but of this the cultivator appears ignorant; the proportion brought up at each ploughing, being small, and soon acquiring a dark color by being exposed. I am fully convinced, that in many places the surface is now at least the whole depth of the ploughing lower than at first clearing.—Of this we need no other proof than the half buried posts in low places, the heads of rivers, creeks and mill ponds filled up, which are everywhere to be seen in our hilly cultivated lands.

But, notwithstanding the before-mentioned supply of vegetable earth from below, the soil employed in cultivation must annually become less fertile, because the coarse, the heavy and adhesive particles of earth, remain on the spot from the beginning, and those of the same properties contained in the fresh earth brought from below, also remaining, while the finer and more friendly parts are continually carried away; at length the proportion of fine soil becomes too inconsiderable to answer the purpose of vegetation to any degree of profit. Thus the land becomes sterile, not so much from the vegetable nutriment being extracted from the soil by the growth of plants, as by the soil itself being removed: that this is a necessary consequence of *shallow ploughing*, on lands that are in any degree hilly, in this climate, I trust, has been satisfactorily proved.

Another material evil that results from the practice of *shallow ploughing*, and which applies to all surfaces, level as well as hilly, is the injury the growing crops sustain for want of a more regular quantity of moisture in the soil; we know by experience that either extreme is fatal to most of our crops; that the practice is calculated to produce both, at different periods, is evident: for, during a long continuance of *wet*, for the reasons before mentioned, the water must *stagnate* in abundance about the *roots* of the *plants:* and on the contrary, a short continuance of *drought* extracts nearly the whole of the *moisture* contained in the thin covering of *loose earth*, and it is not to be supposed that the tender roots of plants in quest of a supply, can penetrate the *compact* earth *below*, which has been hardening ever since its formation.

Hitherto I have principally alluded to summer crops; but if we observe the effects of *shallow ploughing* on winter crops, we shall find the injury still greater. All that has been said will apply to them in their autumnal growth; but it is in the spring, and early part of summer, that it often proves particularly injurious, and sometimes fatal to them. Those who have been accustomed to stopping leaks about mills, &c., know that earth thrown into water, made to incorporate with it, and then subside, settles into a more solid mass, and becomes more impervious to water, than in any other way it can be applied; no ramming is equal to it: the same thing frequently takes place in degree, on the surface of our fields. The great rains that often fall about the vernal equinox drench and almost render *fluid* our *shallow worked* soils; the solution of the finer parts entering the pores as the water evaporates, the whole settles into a *compact mass*, and so remains till harvest; for, notwithstanding it may be frequently moistened, yet no other disposition of parts can be supposed to take place until operated on by frost or the plough.

This state of the soil is too compact to admit of the free extension of the roots, even when moist; but, when hardened by droughts, every particle of nutriment not in contact with some of the roots, is effectually *locked up* from the *suffering plants*. So that it often, nay almost always happens on lands worked in this way, unless very rich indeed, that crops of wheat that look promising in the fall and early in the spring begin to decline towards harvest; and people are complaining of the unfavorable appearance of their wheat: when harvest arrives, the straw is almost too short to cut, and the heads about half the proper length, and those not well filled, yielding six or seven bushels to the acre, where twelve or fifteen might have been reasonably expected, from the quality of the soil: these appearances and products agree with my constant observation for many years past, especially on early sowed corn ground, damages by fly, rust, &c. excepted.

If *manures* are applied to *shallow worked* soils, their good effects in general will be of short duration, as most kinds must soon inevitably travel the road the virgin soil has before them."

Do black hogs have "mange?"

Ornamental Hedges.

One of the most striking features of any country is its fences; so much so, that the various styles of these division lines seem to have almost as much influence in determining its character and general appearance, as the nose on a man's face has in giving expression to his physiognomy. Very many—in fact, the great majority of fences—are excessively ugly. Even those primitive ones in new countries, formed by turning up edgewise the spreading roots of great trees, have the merit of being picturesque—which some have not.

In England, the face of the country is made to wear an aspect of smiling cheerfulness by reason of its numerous hedges; while, in the opposite extreme, in France, where no obvious lines mark the divisions of property, the effect must be quite monotonous. Our own institution—the *rail-fence*—may perhaps give a type of the independence of time and circumstances peculiar to the great American people, but it is not particularly ornamental.

There is no one who can not appreciate and will not acknowledge the great beauty of well-kept hedges. So popular is the idea, that experiments have been made with almost every variety of hardy plants, with a view to test their efficiency in forming suitable hedges. Failure has followed very many of these attempts, and partial success rewarded others. Some few hold their own under all circumstances, as well adapted to make, with proper management, strong and efficient fences. Of these we will not now speak, but leave Buckthorn and Hawthorn, Honey Locust and Osage Orange, each to assert its own claims to superiority as best it can.

But there are many situations where *screens* and *ornamental* fences only are required—not protection against depredators. Many such circumstances will suggest themselves to every one.—As a means of shielding certain spots from cold winds, belts of trees or shrubbery are, oftentimes, very efficient, as well as ornamental; and for inside division lines, screens of hardy evergreens can not be too highly recommended—being at the same time very beautiful, rapid in their growth, simple and easy in their construction, and managed without difficulty. To hide disagreeable and unsightly objects; to inclose portions of the garden devoted to half-hardy plants; to separate the kitchen garden from the more ornamental portions of the grounds; and for an indefinite variety of circumstances, each peculiar to its own locality, these evergreen screens are very happily adapted. They are becoming very popular wherever known.

Of all the evergreens employed for this purpose, the *American Arbor Vitæ* (*Thuya*, or, according to some botanists, *Biota, occidentalis,*) seems best adapted to succeed, for several reasons. It is easily and cheaply obtained, perfectly hardy, and adapted to a great variety of soils and climates. It is native over a large portion of the American continent, and is found in almost every kind of soil and situation. Its form and normal mode of growth is *pyramidal*—just the *proper* form which we wish to encourage in forming a hedge. The natural tendency of the *Thorn* and *Osage Orange* is to grow into a spreading tree, large at the top and thin at the bottom—just the opposite of what we seek, when striving to distort them into hedges. It is a continual battle, as it were, between man and nature, for the supremacy; and just in proportion as man is enabled to conquer, we say the plant is adapted to hedging; while if the plant is stubborn and dies or droops under the treatment, we say it will not do for hedging—it is a humbug. Sometimes, as in the case of the Osage Orange, it seems to laugh at the efforts of man; and, while he sleeps, shoots up sturdily and fractiously, half a dozen times in a summer, into its old tree form, utterly regardless of what is going to become of the hedge beneath it.

Many of the new and foreign sorts of the Arbor Vitæ are very beautiful, but none of them have been sufficiently tested to warrant a recommendation of them for the purpose of which we are speaking. The *Siberian* is more compact in its growth than the *American*, and keeps its color well in winter; but it is also slower in growing, and moreover is scarce and high in price. The *Golden Arbor Vitæ*, although of a beautiful color, is, unfortunately, not quite hardy.

The engraving on the following page is an accurate drawing of a section of a screen, six years from setting, in the grounds of H. E. Hooker & Co., of Rochester, N. Y., now about four and a half feet high, perfectly smooth and dense, and an object of admiration to every one. On the same grounds is another hedge about three feet high, set out three years ago last spring, in length about 800 feet, in which only three plants were lost of the entire planting, and even *these* have never been replaced.

To give an idea of the method of forming and cultivating such a hedge is the object of this article. Attention to a few simple particulars will in a short time yield abundant satisfaction, and allow very few chances of failure.

In preparing to plant, have the ground deep and dry and mellow—not too much enriched

with manure. Calculate for a border on either side of, say, four feet, which is to be *kept clean permanently;* and if the soil is mellow and rich, this forms a beautiful situation for the cultivation of low flowering plants, which appear to very pretty advantage in contrast with the deep green background of the Arbor Vitæ. Dwarf-growing roses—especially of shades of red—are very beautiful in such a contrast. Many other flowering plants will suggest themselves to every one.

After preparing the ground—which is always the first thing to be attended to in projecting a plantation of any kind—a very important point is choosing the proper kind of plants. If taken from the woods and planted without further education into the hedge row, probably not more than every other one would live, and of these one-half more would so far fall behind the rest in health and vigor as to make the entire planting a failure. If, then, you are to rely upon the woods and fields for a stock of plants, choose those as uniform in size as possible, not more than one foot in height, and well furnished with branches. Set them out in rows in well prepared ground, so that they may be cultivated and kept clean. In two years, the majority of them will have become handsome, stocky plants—and when taken up, will be found to have a mass of fine fibrous roots, rendering them sure to live and well adapted to thrive in their future resting places.

However, these two years of time and labor may be saved; for plants like those described

AMERICAN ARBOR VITÆ HEDGE.

may generally be obtained at the nurseries very cheaply. And as a row of such plants becomes an object of beauty from the very commencement, we may consider that it is money well expended. In short, nothing, in all the operations of horticulture, yields so sure and quick returns as this.

Evergreens should always be set in the spring. When the plants are received and unpacked, carefully separate and spread open the roots; cut off all broken portions, lay them in the ground until ready to plant out, and by all means *avoid contact with wind and sun.* Puddle the roots in a mixture of water and clay, with a little decayed manure; then plant immediately by a line, taking care not to crowd the roots, but spread them out evenly; cover them with fine earth, and press the ground firmly about the plant. It is well to mulch the ground with coarse manure, but it is not necessary—always supposing the border to be kept well cultivated.

The proper distance for planting is about one foot apart. Nothing is gained by having more than a single row of plants.

The after culture is exceedingly simple and easily remembered. During the first year the plants need nothing but to be kept clean—occasionally, perhaps, cutting off a straggling shoot. The second spring from setting, stretch a line firmly and evenly across the top of the plants, and cut off all shoots appearing above the line. Stretch the line again on either side, at the base of the plants, and trim up to it. Thus we have the bottom or base, and the apex of the hedge fixed, and if these are true, the rest becomes easy. Shear all off evenly between these points, and we have the form of a triangular prism, which, in the opinion of the writer, is the best, both as regards beauty and well being of the hedge. Practically, it should not be sheared quite to a point on top, but nearly so. The shape of the one represented in the drawing is varied a little from that described by being rounded a little; but in practice it is difficult to make this

perfectly true, which mars the beauty of the whole. However, every one may consult his own taste; and skill in manipulating the shears is only gained by experience. After the third year, the hedge needs only to be trimmed evenly at midsummer, and it will soon become dense and smooth.—*Harris' Rural Annual.*

[For the American Farmer.]

Insects Reawakening from their Lethargy.

GRASSHOPPERS AND INSECT-DESTROYING BIRDS.

Most fortunate are those who love nature, and possess taste and knowledge to appreciate with feeling and delight her wondrous and manifold beauties. The scenes which she presents afford constant amusement; they at once excite and refresh the mind. In old age, the sight of reawakening nature brings back the memory and scenes of early life. Heaven seems to have intended birds as the most cheerful associates of man. And in order to derive the greatest amount of pleasure, the habit of observation must be cultivated and the knowledge of them extended until it becomes more perfect and complete.

March is here—but still winter has not yet retreated; yield it must at last, and will soon pass away. Already there are bees on the wing, early workers, with orders from their queen—wax, propolis, bee-bread and honey are the objects of their search. Many insects are stirring. Beetles concealed under moss, grass tufts and stone heaps, under dried manure, and beneath the decayed bark of aged trees, are now active in their concealments, waiting for the time to come when the genial warmth of sixty degrees shall start them to their labors.

Nature in every department of her work seems delighted when her laws are carried on without interruption. She has given power, strength and instinct to each species of insects and to each species of birds—the Divine law which each must carry out until the end. She created a certain species of insects to live upon and to destroy wild vegetation, and she created a certain species of birds to live upon and destroy the insects. If insects and the birds had never been checked in their natural pursuits they could have carried out the plan of Providence. They carried out the plan of Providence when our Continent was a mere waste. But as rural economy increased in our country, the insect-destroying birds were considered of little value to the cultivated crops—now the wild vegetation is exterminated, the insects that lived on the wild vegetation are compelled to feed upon the grain of the cultivated crops. The birds, when they arrive, seek the fields as usual for their insect food, when at once they are charged with destroying the grain, and their fate is sealed. Ornithologists in the early days of agriculture, should have insisted on their protection, for they full well knew that they were the only means to keep down the ravages of insects. Now, year after year these insects are gaining power and increasing to such an alarming extent as to baffle the wits of the learned philosophers how to destroy them.

B. D. Welsh, of Rock Island, read a paper on insect life before the Natural History Society at Chicago, Illinois, and says, from the northwest out to Minnesota an army of grasshoppers are coming down upon us, having already reached Northern Illinois.

I have seen one bird trapper have seventy mocking birds for sale in Baltimore, caught down in the lower counties of Maryland. He stated to me that he comes three times a year, making two hundred and ten birds. Say that one hundred of these are females, and each female has five young ones at a time, will make five hundred birds. Now add the two hundred and ten old birds, which will make seven hundred and ten birds. Say that these birds consume twenty grasshoppers each, in one day, will make fourteen thousand two hundred, and for one hundred days will make fourteen hundred and twenty thousand grasshoppers which are left at full liberty to eat up the produce of the farmers.—Only think of this. Is it any wonder that an army of grasshoppers is raised in Maryland, if the farmers will permit bird trappers and gunners to come on their farms and destroy insect-eating birds, after the faithful creatures have come thousands of miles, amid the dangers which migrating birds are subject to, and arrived safe to obey the order of their Creator in destroying these noxious insects, and thereby work with him to save his crops. He is also valuable in destroying insects on the wing, and the various kinds of caterpillars which infest our fields.—And are they not valuable in the cotton fields? The grasshoppers do much damage to the young cotton plants, for they not only feed upon the tender leaves, but have been caught in the very act of devouring the petals of the flowers. In the month of October, in Maryland, they arrive at full growth, and possessing great power of flight, prepare to migrate from field to field, to deposit their multitude of eggs for a larger brood of grasshoppers the next year.

I have often been asked if I was not astonished that grasshoppers should increase in such count-

less numbers? No, I cannot say that I am astonished, for insect-destroying birds increase, and if only a few birds destroy the grasshoppers by millions, the grasshoppers must increase by millions, so that these migrating grasshopper birds will have a supply of food when they arrive.

Too often, by unwise interference with the plan of Providence, we defeat the very measures contrived for our protection. We only suffer from our own carelessness in not studying the use of these insect-destroying birds. The death or imprisonment of these birds is an actual loss to the farmers, and encourages the depredations and multiplies the number of destructive insects.

Are these insect-eating birds wholesome food to the human family? I think not, because insects never were intended as food. Graminivorous birds feed principally on grains and seeds, from which many of them detach the husk. All of them may be maintained in confinement on grain alone. They are next to the pigeons or domestic fowls, and most susceptible of enduring the approach of mankind. What means have we to keep them from destroying the cultivated grain? Why, the cage and the gun. They are fine songsters and most luxurious food. So their Creator made and gave to man the power and the means to keep down the increase of these grain-destroying birds, for they are as injurious to the farmers' crops as the grasshoppers.

The insect-eating birds have very delicate constitutions, and if one is not well acquainted with the science of keeping these soft-bill birds on insects and paste, in their cages, they soon die.

I have often heard an entomologist say, that it must be remembered that the ravages of insects are often repaid by the benefits they do. I cannot agree with my learned friend as far as grasshoppers are concerned. I do acknowledge that the fertilizing insects are of the greatest benefit to the farmer's crops; they repay the injury they commit. There is also a Divine law to prevent the birds from destroying a larger number of them than that which is allotted to them, if even man never had destroyed one of these insect-destroying birds.

I will give you some idea of the increase of these grasshoppers. Say that the active life of these birds is ten years, which is directed expressly to the destruction of grasshoppers, and half of the fourteen hundred and twenty thousand above mentioned were females, say seven hundred and ten thousand, and each female should lay thirty eggs, which I think is not the fourth they lay, will make two million and three hundred thousand—now multiply this by the ten years of the active life of the mocking birds, the two hundred and ten birds in the cages of the bird fanciers, and we find they would have destroyed two hundred and thirteen millions of grasshoppers. Is this not of the greatest importance to you farmers and planters? for there is no Divine or human law to keep these two hundred and thirteen millions of grasshoppers from increasing every year on your crops, for these birds can never be returned to the fields again. Can any plan be adopted to take the place of the two hundred and ten birds which have been taken from your fields? If so, I hope it will be introduced, and save Maryland from the army of grasshoppers.

I would suggest to the Agricultural Society—which has been a blessing to Maryland, in stimulating the farmers to seek the machinery most suitable to their purpose, the best manure, the finest animals, and the best poultry—that they turn their attention to the protection of the insect-destroying birds. I would also suggest that some friend to these useful birds get up a memorial in each county throughout the State, and present it to the Legislature for their consideration, and urge on them the necessity of a law for the protection of these best friends of the farmer.

The work of destruction goes secretly and silently on until it becomes manifest by its melancholy consequences. It is now time, kind friends, to do all in your power to save your birds. Let the trap be your field, the cage be your trees, and hear these fine birds, for they are the best songsters among the feathered tribes of America. In their native or domestic state, during the solemn stillness of night and as soon as the moon rises in silent majesty, they begin their delightful solos and serenades us the livelong night with a full display of their vocal powers. It is their assurance to the farmers and the planters that they are not unmindful of their work, and will finish it according to the order of their Creator.

J. JACOB BOWER.

PROPAGATING GRAPES.—The *Gardeners' Monthly* says: "Grape vines from eyes may now be propagated. Cut the shoot immediately above an eye, and about one inch below. Mix them with slightly damp moss for a couple of days or so, and then insert up to the buds or eyes in sand with a bottom heat of 70 deg. Native grapes, having harder wood, may be retained in the moss for two weeks, when the wood will be softened sufficiently to strike root at once." It will still do to propagate as above, where the cuttings have been properly taken care of. Some persons have fair success in planting cuttings, with half an inch of wood on either side, the same as corn, of course only one bud at a place, in light soil, in a warm border.

Treatment of the Horse.

This is most emphatically an age of improvement—of progress—in more respects than one. While the people of America are advancing, if not rapidly, yet surely, in education and refinement, there is no one branch in which more progress has been made in the ten last years, than in the treatment of domestic animals—and especially the horse, the noblest and most useful of them all. There are but few of our readers who cannot from their own observation, if not from their own experience, fully endorse this statement. But a few years since, and teamsters and others who owned and used horses, whipped and maltreated them with impunity, and many were honest in the opinion that horses could be controlled, governed, and made to do their work in no way so well as by a free and frequent use of the lash, and governed their conduct accordingly, while there were comparatively few who questioned their theory or practice, or took the trouble to think or care whether it was the right or the wrong way to treat beasts of burden.—But to day there is an entirely different idea in every enlightened community upon this subject. In any of our large towns or villages there is no offence against good manners or morals that would call forth more indignation, than would the abuse of the noble horse, by those intrusted with his care or use—none for which a man would be more surely held amenable to the laws or suitably punished. He who would ill-treat his brutes is regarded as worse than a brute himself.

The idea that a colt must be *broken* to fit him for use has exploded, and instead of the cruel and brutal treatment which a colt or young horse almost invariably received at the hands of the breaker-in, has been exchanged for a more humane, christian-like and sensible system of education. We have long since been a convert to Rarey's opinion, that no horse is by nature vicious, but that it is the natural and inevitable result of a bad system of training and use. If we but recall our own observations we shall remember that some men that we know always have nervous, uncomfortable, unsafe and vicious horses—while others almost uniformly have good tempered, reliable and safe ones. The former is as surely the result of ignorant, harsh and inhuman treatment, as the latter is of enlightened, firm, gentle and kind care and management. The same rules and principles hold good in the management of children. Families of children may differ widely in their temperaments and dispositions, while all are kind, obedient and respectful to their parents and others, or the contrary, according to their management and education. The old "spare the rod and spoil the child" system of bringing up children, we trust has gone down to the grave of the Capulets long since, and will never be exhumed, and every lover of the horse will rejoice when the old and cruel system of pounding knowledge and a good temper into them shall be buried in the same place.

Within the few last years the horse has received much attention in his breeding and management, and is correspondingly valued and appreciated; and we hope the time is not very distant when he will be treated with uniform humanity and kindness. This would enhance the value of the animal and elevate the character of man.—*Stock Journal.*

Save Time in Blooming Annuals.

Hot-beds have now become indispensable, and their virtues should be more widely known and appreciated. When we consider how easily they are made, and the advantages to be derived from them in our cold and backward springs, we wonder that every one who plants seed should think of getting along without them. We have for some time enjoyed the growing taste for the cultivation of flowers which has been manifested, and would suggest that the following varieties, with many others of great beauty, can be made to bloom much earlier by sowing the seed in a frame about the first of April, in our colder regions, than they usually do when sown in the open ground, unless indeed they have been already sown in the autumn previous, which is the proper time for sowing hardy annuals and perennials. In sowing, do not cover the seed deeply, but have a good depth of earth beneath them, say four to six inches. Some of the kinds we mention are tender and will not bear to be sown in autumn. In removing from the hot-bed, the earth should be wet pretty thoroughly an hour or so previously, that a ball of earth may be taken with the plant. The varieties of Asters—Delphinium formosum—Balsam and Stock, raised in small pots, and turned out damp, being careful not to expose the tap root of the Stock—Coxcomb—Clarkia—Dianthus, (or varieties of pink,)—Globe Amaranth—Abronia umbellata—Petunias—Phlox—Salpiglossis—Schizanthus—Canary Bird Flower—Verbena—Pansy—Convolvulus.—*Country Gent.*

The mode of churning in Fayal, one of the Azores, is to tie the cream up in a goat-skin, and kick it about till the butter comes.

Soluble Phosphated Peruvian Guano.

ALEXANDRIA, VA., Feb. 15, 1861.

To the Editor of the American Farmer:

MR. EDITOR:—The December (1860) number of the "Farmer" contained an able and interesting communication, from Prof. Campbell Morfit, of New York, on the subject of "Sombero Guano and other commercial varieties of Phosphate of Lime, and in reference to their capacity for manipulating and superhosphating." In that communication Prof. Morfit exhibited two tables, Nos. 3 and 4, the former giving the results of his analyses of three "representative samples of certain manipulated Guanos, containing *Navaza Guano* as their phosphatic material in chief," and the latter, (table No. 4), showing "the analytical results from two fertilizers, made with care in the selection of all the materials, the phosphatic element being Sombrero Guano."

Prof. Morfit designates these two fertilizers as "A and B," with the explanation that "A" is a "*Soluble* Phospho-Peruvian fertilizer," while "B" is a "manipulated Guano." After giving the respective analyses of "A and B," side by side, he proceeds to state that—"The poverty and objectionable features of the Navaza mixtures are seen in 1, 2 and 3, of table No. 3, as compared with the results in *A* and *B*, of table 4, from Sombrero Guano. No other phosphatic material than the Sombrero could be made to yield a fertilizer like *A* of table 4, *so affluent and yet so well adjusted in all the elements for profitable fertilization:* while, the employment of Sombero in *B* gives also as rich a "*Manipulated Guano*" as can be probably made at the price charged for it by the vender."

Whilst we prefer to see the reputation of our "Soluble Phosphated Peruvian Guano" established, rather by the successful results *of its application to the soil*—this being in our opinion the surest *practical* evidence of its value—than any analysis whatever, we nevertheless frankly acknowledge feeling a proper degree of pleasure and satisfaction at the high estimate placed upon our fertilizer, by a gentleman so reliable and of such eminence in his profession as Dr. Morfit.

Although we have privately informed some of our friends of the value placed upon our fertilizer, (as compared with other manipulations), by Prof. Morfit, it was not our intention at this time, and *in this manner*, to remove the veil of secrecy, which he had with so much delicacy and propriety of feeling, dropped between the public and the proprietors of the different manipulations exhibited by him. Preferring rather that *practical results* should first prove the truth of his remarks, before connecting them publicly with our fertilizer. But we are reluctantly forced to do so, in consequence of a *change of title* in one of the manipulations *made since the publication of Dr. Morfit's* article, which is calculated to deceive (unintentionally no doubt) the public.

We beg therefore to state that *analysis "A" of "table No. 4" corresponds exactly with Prof. Morfit's analysis of our "Soluble Phosphated Peruvian Guano,"* and that analysis *"B"* of said table also corresponds with his analysis of Messrs. John S. Reese & Co.'s "Phospho-Peruvian (or Manipulated) Guano," as published by themselves.

We are with great respect, your friends and servants, FOWLE & CO.

Plant Protectors.

Few articles about a garden are more convenient than these simple affairs, of which an ordinary hand, at all used to the saw and hammer, could make in one wet day probably all that would be required. We have alluded to them before. They are made as follows: Cut up a three-fourth inch plank, at least a foot wide, into lengths of twelve or fifteen inches. These are the covers or tops, which are to screen your plants from sun and frost. Raise them above the plants you wish to protect, by nailing them at each end to a narrower bit of plank, say six to nine inches in width, and of the same length as the width of the cover. When you fear a frost, put these over the hills of beans, cucumbers, &c. It will protect them perfectly. If you wish to transplant your cabbages, or anything in your flower garden, do not wait for a "season," but do it any day, just at night, in fresh-dug soil, giving the roots a good watering.—Cover them daily with the protectors, taking them off at night, that they may be freshened with the dew. After a couple of days it will be sufficient to stand the protector on edge on the south side of the plants to keep off the mid-day sun. In three or four days the roots will be established. Another use for them is, when the weather is so dry that hills of melons, squashes, &c., will not come up. Water the hills with a fine rose watering-pot, and lay the protector over the hills, and the young seedlings will soon make their appearance. When above ground, take off the protector and let the dew fall upon them at night, and in a day or two dispense with it entirely. They are excellent, also, to put over the patches of newly planted flower seeds, causing them to come up much sooner. Remove them when necessary to admit mild rains, and entirely when the plants appear. Try a few of them, and you will find they are far better than flower-pots, which are generally used for these purposes, excelling in cheapness, convenience and utility.—*Exchange.*

Wholesale Produce Market.

Prepared for the American Farmer by ELLICOTT & HEWES, *Produce and Commission Merchants, 99 Exchange Place.*

BALTIMORE, February 23, 1861.

BUTTER.—Ohio, in brls. and kegs, 10 to 11; Virginia and Pennsylvania, in kegs, 11 to 12½; Glades, 12½ to 23; Roll, 12½ to 18.

BEESWAX—30 cts.

CHEESE.—Eastern 11, Western 10.

DRIED FRUIT.—Apples $1; Dried Peaches $2.

EGGS—In barrels, 14 cents per dozen.

FEATHERS—45 to 50 cents for good Southern.

LARD.—Brls. 10½, kegs 11, jars and other country packages, 11½.

TALLOW—10½ cents.

WOOL.—Unwashed, 30 cents.

Baltimore Markets, Feb. 23.

COTTON.—We quote prices as follows, vis:

Grades.	*Upland.*	*Memphis and Gulf.*
Ordinary	7¾a 8¾	7¾a 8¾
Good do	9¾a10¾	10¾a11¾
Low Middling	11¾a11¾	12 a12¾
Middling	12 a12¾	12¾a12¾
Strict do	12¾a12¾	12¾a13
Good do	12¾a13	13¼a13½
Middling Fair	13¼a13½	13¾a14

FISH—We quote prices as follows: Mackerel, $6.75 for medium No. 3; $9.25 for large No. 3. Alewives, $4. Labrador Herrings, $4.50; Common Herrings, $2.50 per barrel.

FLOUR.—We quote Howard street Super, $5.25; Extra, $5.75. City Mills Super, $5.12½; Extra, $6.00. Family Flour, $6.50 to $7.00 for the different brands; very choice $8.00.

Rye Flour and Corn Meal.—We quote Rye Flour at $4.00. Corn Meal at $3.00 to 3.25 per bbl.

Buckwheat Flour—$1.75 to $2 25 per 100 lbs.

GRAIN.—The receipts are light. Red Wheat, $1 25 to $1.35 for fair to prime. White Wheat, $1.35 to $1.60 for medium to prime; $1 63 to $1.65 for choice lots.

Corn.—White. 58 to 65 cents; yellow, 58 to 63 cents.

Oats.—Virginia and Maryland, 30 to 32 cents. Pennsylvania, 33 to 34 cents.

Rye.—Maryland and Virginia, 65 to 68; Pennsylvania, 70 cents.

Mill Feed.—Brown stuff, 16; middlings, 30 cents per bushel.

PEAS AND BEANS.—Black-eyed Peas, $1 00 to $1.10 per bushel. White Beans $1.65 to $1.75 per bushel.

SEEDS.—Clover seed, $5 to 5.50. Timothy, $2.75. Flaxseed, $1.30 per bushel.

PROVISIONS—*Bacon.*—Shoulders, at 8¼, and Sides at 10¼ cents per lb.

Bulk Meat.—Shoulders 6¼; Sides 9 cents per lb.

Pork.—Mess, $17.25; Prime, $14; Rump, $13.50.

POTATOES.—Common, 60 to 70 cts.; White Mercers, 80 to 85 cents per bushel.

ASHES.—Pot and Pearl, $5.12½ per 100 lbs.

TOBACCO.—There is a fair demand existing for Maryland Tobacco, sales to a moderate extent of old crop having been made. There has been very little new crop yet received, but if here it would doubtless bring full rates.

We quote frosted Maryland at $2; common ground leaf at $3 to $4; middling, $5 to $5 50; and best, $8.50 to $12; common crop, $2.50 to $3.50; middling, $4 to $4.50; good middling, $5 to $5.50; good leaf, $6.00 to $6.50; and fine at $7 to $12. We quote Bay Tobacco as follows: tips or tails at $3.50 to $4; ground leaf at $4.50 to $5.50; fine yellow at $9.50 to $14, and good red, $12 to $13. Nothing doing in Ohio Tobacco—inferior to good common at $3 to $4; red and spangled at $5 to $6.50; good and fine red and spangled at $7 to $8, and good fine yellow at $9 to $12. In Kentucky Tobacco there are no transactions to note—common lugs at $4.25 to $4.75; good do. at $5.25 to $5.50; inferior leaf at $5.75 to $6.25; good do. at $6.50 to $7.50; fine at $7.50 to $9; choice at $10 to $12; and rich heavy Kentucky at $7 to $12.50.

GUANO AND OTHER FERTILIZERS.—Prices continue without change. We quote Peruvian at $61 to $62 per long ton, according to quantity—the latter being for a single ton and upwards. For less than a ton, at the rate of $56 per ton of 2000 lbs.; California or Elide Guano, $40 per long ton: Manipulated, $47; Super-Phosphate, $45; Mexican. AA, $20 to $22; American Guano $40 per ton of 2240 lbs.; Sombrero, $30 per long ton; Iohaboe Guano, $50. Navasa Guano, $25 per ton. Ground Bones, $27 per 2000 lbs. (packages extra.) Poudrette $10 per ton in bulk. Plaister, $1.25 per brl.

HAY AND STRAW.—Hay, $14 to $15 per ton. Rye Straw, $14 per ton.

GINSENG.—45 to 50 cents per lb.

CATTLE MARKET, Feb. 21.—The offerings at the Scales on Thursday footed up 625 head, being 25 more than last market day. There was quite an active demand for Cattle, and prices at the close were decidedly stiffer. Of the above offerings, 100 head were driven to Philadelphia, and the balance (525 head) were taken up by Baltimore butchers at prices ranging from $3 to $4.75, and averaging $3.75 per 100 lbs., being about at the same rate as last Thursday. There were some few choice lots which commanded higher figures. The market closed stiff.

HOGS—There was a plentiful supply of live Hogs in market to-day, but with a good demand from the butchers prices ruled steady. Sales were made of fair to prime lots at $7.75 to $8.25 per 100 lbs.

SHEEP.—There was an abundant supply at market today, but the demand was not active. Sales were made at $4 to $5, gross.

NEW ADVERTISEMENTS.

CONTENTS OF THE MARCH NO.

Office of Inspector of Guano,
No. 63 Second street.

ANALYSES of the cargoes of Guano imported in the following vessels:—

1860. Peruvian.

July	23—Brig Times,	Ammonia 15.35 per cent.
	30—Ship Peruvian,	Ammonia 16 45 per cent.
Aug.	20—Schr. G. T. Adams,	Ammonia 15.30 per cent.
	20—Ship Wild Rover,	Ammonia 15.80 per cent.
	21—Ship Bremen,	Ammonia 16.10 per cent.
	22—Ship War Hawk,	Ammonia 15.75 per cent.
	22—Schr. Syl. Allen,	Ammonia 15.40 per cent.
	25—Barque Snapdragon,	Ammonia 16.80 per cent.
	25—Schr. West Dennis,	Ammonia 15.37 per cent.
Sept.	7—Ship Santa Claus,	Ammonia 15.90 per cent.
	11—Ship Mary Robinson,	Ammonia 16.35 per cent.
	12—Ship South America,	Ammonia 16.32 per cent.
	17—Ship Hermine,	Ammonia 16.27 per cent.
	25—Barque Greenland,	Ammonia 16.10 per cent.
Oct'r	1—Ship William,	Ammonia 15.80 per cent.
	1—Ship Jenny Paine,	Ammonia 15.80 per cent.
	3—Ship Arey,	Ammonia 16 10 per cent.
	3—Ship Grace Gordon,	Ammonia 15.55 per cent.
	26—Ship Sybil,	Ammonia 15.85 per cent.
	31—Ship Cherubim,	Ammonia 15.78 per cent.
Nov.	3—Ship Barreda Bros,	Ammonia 16.50 per cent.
	3—Barque Waterman,	Ammonia 16.45 per cent.
	5—Ship Ocean Traveler,	Ammonia 16.65 per cent.
	30—Barque Scio,	Ammonia 16.05 per cent.
Dec.	3—Ship Jos. Peabody,	Ammonia 16.10 per cent.
	3—Ship Mary McNeir,	Ammonia 16.15 per cent.
	3—Barque Golden Era,	Ammonia 16.00 per cent.
	6—Barque Oasis,	Ammonia 15 60 per cent.
	8—Ship John Knox,	Ammonia 15 75 per cent.
	19—Ship Noonday,	Ammonia 15.80 per cent.
	19—Ship Peerless,	Ammonia 16.07 per cent.
	26—Ship Manlius,	Ammonia 16.15 per cent.
	26—Ship Blondell,	Ammonia 16.20 per cent.

1861.

Jan'y	3—Ship West Wind,	Ammonia 15 95 per cent.
	5—Ship John Tucker,	Ammonia 16.50 per cent.
	5—Ship Archer,	Ammonia 16.35 per cent.
	11—Ship Napier,	Ammonia 16 40 per cent.
	11—Ship Thos H Perkins,	Ammonia 16 56 per cent.
	11—Ship Chapin,	Ammonia 16.23 per cent.
	15—Ship Astrea,	Ammonia 16.34 per cent.
	22—Ship Morning Glory,	Ammonia 15.95 per cent.
	30—Ship Corinne,	Ammonia 16.05 per cent.
	30—Ship Sumatra,	Ammonia 16.08 per cent.
Feb'y	4—Ship Gladiator.	Ammonia 16.35 per cent.

All the above cargoes contain Phosporic Acid, equal to from 26 to 30 per cent. of Bone Phosphate of Lime.

1860. White Mexican.

July 19—Brig Princess, Phosphoric acid 35.15, equal to Bone Phosphate of Lime 76.15 per cent.

July 23—Brig Montrose, Phosphoric acid 34.45, equal to Bone Phosphate of Lime 74.64 per cent.

July 26—Brig Humboldt, Phosphoric acid 34.55, equal to Bone Phosphate of Lime 74.85 per cent.

July 26—Schr. Tremont, Phosphoric acid 32 50, equal to Bone Phosphate of Lime 70.95 per cent.

August 4—Schr. Isabel, Phosphoric acid 21.50, equal to Bone Phosphate of Lime 46.93 per cent.

August 30—Brig Coquette, Phosphoric acid 27.77, equal to Bone Phosphate of Lime 60.16 per cent.

Nov. 1—Brig Humboldt, Phosporic acid 32.75, equal to Bone Phosphate of Lime 70.96 per cent.

Nov. 19—Schr. Luther Child, Phosphoric acid 33.00, equal to Bone Phosphate of Lime 71.50 per cent.

Nov. 30—Brig Montrose, Phosphoric acid 29.53, equal to Bone Phosphate of Lime 63.98 per cent.

1861.

Jan. 21—Schr. Orinoco, Phosphoric acid 33.45, equal to Bone Phosphate of Lime 72.47 per cent.

1860. Mexican.

July 19—Brig Princess, Phosphoric acid 28.00, equal to Bone Phosphate of Lime 60.66 per cent.

July 23—Brig Montrose, Phosphoric acid 27.15, equal to Bone Phosphate of Lime 58.82 per cent.

July 26—Brig Humboldt, Phosphoric acid 27 40, equal to Bone Phosphate of Lime 59.36 per cent.

August 31—Brig Coquette, Phosphoric acid 17.76, equal to Bone Phosphate of Lime 38.46 per cent.

Sept 4—Schr. Alice Mowe, Phosphoric acid 25.10, equal to Bone Phosphate of Lime 54 38 per cent.

Sep. 21—Barque Sir G. H. Seymour, Phosphoric acid 27.00, equal to Bone Phosphate of Lime 58.50 per cent.

Oct. 2—Schr. Jennie Morton, Phosphoric acid 24.05, equal to Bone Phosphate of Lime 52 11 per cent.

Nov. 1—Brig Humboldt, Phosphoric acid 28.50, equal to Bone Phosphate of Lime 61 75 per cent.

Nov. 12—Brig Mary Morton, Phosphoric acid 25,00, equal to Bone Phosphate of Lime 54.16 per cent.

Dec. 14—Brig John R. Rhoads, Phosphoric acid 14.00, equal to Bone Phosphate of Lime 30.33 per cent.

Dec. 14—Brig Roseway Belle, Phosphoric acid 24.20, equal to Bone Phosphate of Lime 52.43 per cent.

1860. Sombrero.

July 26—Schr. Seguin, Phosphoric acid 34.45, equal to Bone Phosphate of Lime 74.64 per cent.

Aug. 3—Brig Ianthe, Phosphoric acid 34.56, equal to Bone Phosphate of Lime 74.88 per cent.

Sept. 5—Schr. J. W. Maitland, Phosphoric acid 35.20, equal to Bone Phosphate of Lime 76.26 per cent.

Sept. 25—Schr. Wm. Clark, Phosphoric acid 33.50, equal to Bone Phosphate of Lime 72.58 per cent.

1860. Nevassa.

Aug. 6—Brig S. G. Bass, Phosphoric acid 32.68, equal to Bone Phosphate of Lime 70.80 per cent.

Aug. 17—Brig Romanee, Phosphoric acid 32.62, equal to Bone Phosphate of Lime 70.67 per cent.

Sept. 17—Schr. R. W. Troth, Phosphoric acid 32.80, equal to Bone Phosphate of Lime 71.06 per cent.

Oct. 31—Brig Ocean Belle, Phosphoric acid 32.76, equal to Bone Phosphate of Lime 70.98 per cent.

Nov. 19—Brig Romance, Phosphoric acid 32.52, equal to Bone Phosphate of Lime 70.46 per cent.

Nov 28—Brig S. G. Bass, Phosphoric acid 32.82, equal to Bone Phosphate of Lime 71.11 per cent.

1861.

Jan. 8—Brig Cemantha Hopkins, Phosphoric acid 32.50, equal to Bone Phosphate of Lime 70.41 per cent.

Jan. 21—Brig Roanoke, Phosphoric acid 32.40, equal to Bone Phosphate of Lime 70.20 per cent.

1860. California.

Aug. 3—Schr. Somersett. Ammonia, 4.95 per cent; Phosphoric acid 13.98, equal to Bone Phosphate of Lime 30.29 per cent.

Aug. 30—Schr. Rescue, Ammonia 4.90 per cent.; Phosphoric acid 14.00, equal to Bone Phosphate of Lime 30.33 per cent.

Sept. 5—Schr. Isabel Alberto, Ammonia 4.89 per cent.; Phosphoric acid 13.90, equal to Bone Phosphate of Lime 30.11 per cent.

1860, African.

July 30—Schr. Frances Elmore, Ammonia 5.35 per cent.; Phosphoric acid 8.34, equal to Bone Phosphate of Lime 18.05 per cent.

1860. Jarvis Island.

Oct. 9—Schr. John Warren, Phosphoric acid 11.26, equal to Bone Phosphate of Lime 24.39 per cent.

Oct. 12.—Schr. Virginia, Phosphoric acid 13.10, equal to Bone Phosphate of Lime 28.38 per cent.

THOMAS I. PITT, *State Inspector.*

Baltimore, February 11, 1861. mar.